

## Water Heater Display Winners Named

(Concluded from Page 1, Column 4)  
pictured a cartooned monkey firing a dilapidated stove near the old-type water heater, while the floor was strewn with coal, wood, and ashes.

Drawing at one side of the window, flanked by electric water heaters, showed a disgusted housewife telling her husband, "if you had to do dishes with cold water, you'd buy an electric water heater, pronto!"

Ten \$10 prize-winners in the display contest, with their window designers, follow:

Buffalo Niagara Electric Co., Buffalo (J. A. Apsey); Tennessee Electric Power Co., Chattanooga; Wisconsin Public Service Co., Wausau (A. A. Pepper); Kansas Gas & Electric Co., Wichita (O. J. Faucher); Nebraska Power Co., Omaha (M. H. Rousso); Florida Power & Light Co., Miami (S. R. Wilson); Kansas City Power & Light Co., Kansas City, Mo.; Philadelphia Electric Co., Philadelphia (W. G. Brown); Utah Power & Light Co., Provo, Utah (LeRoy Condie); Iowa Electric Light & Power Co., Cedar Rapids, Iowa (J. C. Young).

Judges in the window display contest were: Bernard B. Green, treasurer of Ivel Display Corp.; Samuel Blum, director of display, Bloomingdale's; and Franklin Fischer, president of Fischer Exhibits, Inc., all of New York City.

## Utility, Plumbers Joining In Water Heater Drive In Portland, Ore.

PORTLAND, Ore.—Portland General Electric Co. and Northwestern Electric Co., local utilities, are staging a cooperative sales drive with dealers and plumbers to boost sales of electric water heaters.

Both companies are selling the heaters at manufacturers' suggested list prices, estimated at 10 to 15% above current retail price, to encourage dealers and plumbers to put more effort into their selling.

The companies have agreed to install heaters sold by dealers at a fixed price for a normal job of \$14.50 for wiring, and \$7 for plumbing work. They also are carrying the purchasers' contracts on a credit basis of \$1 down payment and \$1 monthly payments.

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## Store 'Sells' Its Cooling Job To Public



A display of the materials used in its air-conditioning system was used by the Boston Store, Milwaukee, to give patrons visible impression of the equipment responsible for more comfortable shopping conditions.

## Store Shows Customers How Cooling Works

MILWAUKEE—Air conditioning is being "sold" to the public by a window display in The Boston Store here, which explains what the establishment has done to make shopping more comfortable for its patrons.

Located on one of Milwaukee's principal streets, the display window contains a miniature circulating pump used in connection with the cooling system, and other parts of the system are graphically illustrated by several show cards.

As cooling water for the store is obtained from a deep well, one of the cards states that "this is a chart of the shaft that goes 1,750 feet below the sidewalk to reach an icy underground stream."

Near the small water pump is a card reading, "this is a replica—100 times smaller—of the pump that brings the water up. Our pump is the second largest in the state of Wisconsin, with a capacity of 2,500,000 gallons every 24 hours."

Next to a small motor is a sign which says "this is a miniature of the motor that runs the pump. Our motor is 100 times this size."

Another placard states, "this is how the air is filtered, cooled, and dehumidified, giving you the dry, refreshing, healthy coolness of a mountain top."

A larger card, headed "Shop in Air-Cooled Comfort," shows a thermometer with mercury painted in to indicate a temperature of 72° F., which is the maximum reached in the store, even on the hottest days.

The well-water conditioning system in the Boston Store was installed at a cost of approximately \$60,000. Two banks of water coils are employed in cooling the air from 98 to 50° F. before it enters the distributing system. One of these banks of coils contains 14,628 sq. ft. of surface.

Executives of the Boston Store report that the air-conditioning installation has paid dividends in increased sales. Many women enter the store on hot days just to "cool off," and remain to shop, officials state. In this way the air-cooling system makes many new friends for the store.

## 6-Month Refrigerator Sales Down 40%

(Concluded from Page 1, Column 5)  
June, with 8,433 units, but totaled 76,187 for the six-month period to trail Pennsylvania, which had a half-year total of 77,652 units despite a June total of but 5,073.

Sales of commercial refrigeration equipment by Nema manufacturers totaled 126,261 units for the first six months of this year, as compared with 179,582 for the same period of 1937. June shipments alone totaled 21,522 this year, against 33,643 in the same month last year.

While well below their 1937 marks, June commercial shipments did not compare too unfavorably with 1936 totals for the month, 28,543 units.

Self-contained air conditioner sales were well up for the half-year over 1937 totals, amounting to 10,736 units for both air and water-cooled models, as against 9,974 for the period last year. Bottled beverage cooler shipments totaled 29,359 units this year, compared with 31,063 last year; and ice cream cabinets 22,513 units, against 23,281 last year.

## Montgomery Ward Reduces Prices on Refrigerators

CHICAGO—Montgomery Ward & Co.'s "fall" catalog lists the company's 6½-cu. ft. "standard" refrigerator (model E269 C608) at \$112.95, a reduction of about 7% from the price of \$121.95 which appeared in the "spring" catalog.

A small reduction also has been made in the price of the "economy" model, which lists in the fall catalog at \$91.35, compared to the \$93.95 at which it was listed in the spring catalog.

Prices of other major appliances showed little change.

## Louisiana Court Upholds Anti-Canvassing Law

SHREVEPORT, La.—Louisiana's Supreme Court has upheld a Shreveport city ordinance prohibiting house-to-house canvassing, thus creating another instance in which legitimate salesmen must suffer for the misdeeds of a few fraudulent peddlers.

The Shreveport law forbids "solicitors, peddlers, hawkers, itinerant merchants, and transient vendors of merchandise" from "going in and upon private residences" unless they have been "requested or invited to do so by the owner or occupant."

Excepted by this statute, however, are those persons who deliver ice, dairy products, or perishable produce, as these individuals are held to supply a public need from day to day.

Scoring the fraudulent practices of many peddlers, and the consequent danger to unsuspecting housewives, the court declared that "no law gives a licensed peddler the right carte blanche to enter a private residence for the sale of his goods, nor does the state grant him any such arbitrary or unreasonable privilege under his license."

Although licensing of peddlers is controlled by the state, the Louisiana legislature last year granted Shreveport a new charter which specifically gave the city the right to "regulate or suppress" peddlers as a nuisance. The court, in its decision, seemingly confirmed the legality of this charter, while denying that itinerant salesmen possess any right under common law.

## Vining, Cameron Talk To Coast Appliance Men At Dinner

(Concluded from Page 1, Column 2)  
through an NBC hook-up from Mr. Bergen's Hollywood home.

Mr. Cameron talked on "Crusading for Better Business," and explained the National Salesmen's Crusade now being conducted throughout the country. He urged the 500 men attending the meeting to enlist speakers to give daily selling talks, and stimulate sales in their own business.

Stating that the radio industry is working toward closer cooperation between manufacturer, distributor, and dealer, Mr. Stutz predicted the end of "crazy merchandising schemes" involving long terms and resultant false inventories.

Manufacturers are showing more reason by not issuing "fictitious" list prices and by cutting down on their tendency to overload distributors.

Replete with the customary Vining witticisms, "Salesman Sam's" talk was on "Dirt Selling." Mr. Vining declared that extensive advertising campaigns, elaborate window displays, and involved promotion programs are of little value, unless the salesmen are properly trained.

L. B. Quinby, of Breuner's appliance store, Oakland, Calif., was chairman of the meeting. E. J. Hinckley, vice president in charge of sales for James Graham Mfg. Co., was toastmaster.

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April 19, 1938

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## THE COLD CANVASS

By B. T. Umore

### 75 Years Ago

While Brooklyn and New York have been going mad over Hughes and Corrigan, Detroit has been having its big celebration, too. Detroit's hero, however, is no fly-by-night (or by day, for that matter). He is Henry Ford, the town's leading citizen, who was 75 years of age on the 30th day of July.

At an enormous civic banquet held in Mr. Ford's honor, a gold plaque, mounted on an Italian marble base, was presented to the automotive pioneer. This plaque consists of a reproduction in gold plate of the front page of the Detroit Free Press for July 30, 1863, the day Mr. Ford was born out Dearborn way.

Looking over this front page reproduction, we spied something. It was a little article entitled, "Artificial Ice," and it read like this:

"A great degree of cold is produced by a mixture of saltpetre and Glauber salts, and there are now manufactured in England and exported to India &c., in large quantities, chemical mixtures known as freezing powder, by means of which rough ice can be produced in 15 minutes, at a cost of 1s. 9d., or about 4¢ per pound. This powder, introduced into a little machine, invented by the same person, may be used on the table to ice wine or water with the greatest celerity. A bottle of champagne may be iced in ten minutes for 3d. So great is the intensity of cold produced that the sparkling contents of the bottle may be actually transformed into a spongy mass."

### 35 Years of Progress

Refrigeration has come a long way since that day, and so has Henry Ford. In fact, it wasn't until the early years of the century that both refrigeration and Henry Ford began their era of rapid expansion, development, and usefulness to the people of America and the world.

Refrigeration has brought good, palatable food to everybody; Henry Ford brought cheap transportation to the masses. Neither of those summations, we realize, are at all adequate.

(Concluded on Page 3, Column 1)

## Planned, Patient Approach Gets Results For Air-Cooling Dealer In Town of 21,000

LUBBOCK, Tex.—By making a detailed study of each prospect's problems, and presenting a service specifically designed to meet these problems successfully, McPherson Engineering Co. has sold approximately \$100,000 worth of air-conditioning equipment and services during the past 12 months in this city of 21,000 and the surrounding territory.

"We believe our air-conditioning business has grown primarily because of the first two steps we take in discussing air conditioning with a prospect," explains Frank McPherson, head of the company.

"The first thing we do is to consult with the prospect and study his premises, to become familiar with the problems which he hopes to overcome with air conditioning.

"Determining these factors, we then study the situation to determine what points we may advance, as the prospective sale develops, which will most appeal to the specific prospect. Some elements of air conditioning

appeal to one prospect more than another. We try to analyze the situation sufficiently to know what arguments to stress in bringing the sale to a successful close."

McPherson Engineering Co. has developed a definite procedure in developing a casual prospect into a customer. This plan is followed consistently in all cases.

First, the representative of the company talks to the prospect, to determine his views of air conditioning and what he expects to be accomplished with the installation. This talk determines for the representative whether or not the prospect is real or only curious about air conditioning. If the salesman decides that he has a real prospect, he then goes into the second step.

He surveys the entire premises to be air conditioned, making a complete, rough sketch, showing the dimensions of the building, the various rooms or departments and all other facts of value in guiding the engineering staff in determining the

(Concluded on Page 9, Column 1)

## Weekly Wage Sought By Salesmen's Union

MILWAUKEE, Wis.—Negotiations which would provide a minimum weekly wage scale for appliance salesmen and extend the police power of the Milwaukee local No. 1343 of the Retail Appliance Salesmen's Union, an AFL affiliate, over appliance sales were started last week between a committee of the union and representatives of local dealers.

The action marks the second major step taken by the aggressive labor organization which last March started to eliminate unfair trade practices that were claimed to have "demoralized the retail household appliance field in Milwaukee." It closely follows a recent demonstration of the union's power in placing several retail outlets classed as "hopeless price-cutters and chiselers" on its unfair list, cutting them off from lines of several distributors who are cooperating with the union, and precluding their employment of union salesmen.

Benefits for salesmen dominate points on which negotiations were started last week, whereas the original contract had as its primary

(Concluded on Page 15, Column 3)

## Westinghouse Promotes O'Donnell, Cosgrove, Newcomb, Clark

MANSFIELD, Ohio — Appointments and changes in the headquarters organization of the merchandising division of Westinghouse Electric & Mfg. Co. have been announced by R. E. Imhoff.

R. C. Cosgrove, formerly household refrigerator sales manager, has been named manager of the household refrigerator department.

J. F. O'Donnell, formerly central district manager, is assistant sales manager of the merchandising division.

T. J. Newcomb, formerly commercial manager, has been named

(Concluded on Page 16, Column 5)

## Groff New Servel Chairman Succeeding Wenner-Gren

EVANSVILLE, Ind.—Charles G. Groff has been elected to succeed Axel L. Wenner-Gren as chairman of the board of Servel, Inc., manufacturer of Electrolux refrigerators.

Mr. Wenner-Gren has resigned as a director and board chairman.

## 71% of Space For All-Industry Show Jan. 16-19 Is Sold

CHICAGO—M. W. Knight, sales manager of Peerless of America, Inc. and chairman of the Exhibition Committee of the first All-Industry Exposition which is being sponsored by the Refrigeration Supplies & Parts Manufacturers' Association, reports that 71% of the exhibit space has already been sold with over five months to go before the Exposition will be held at the Stevens hotel in Chicago, Jan. 16 to 19, 1939.

This will be the first exposition designed to attract all branches of the industry including manufacturers of complete equipment, distributors and jobbers, dealers, contractors and service companies, etc. It is distinctive, therefore, in its objective of bringing together at one time all factors interested in promoting these industries as a whole.

In addition to the exhibits of a great variety of component parts, material and supplies used by the refrigeration and air-conditioning industries, there will be two small theaters available for continuous educational performances and entertainment.

The sponsoring association has extended a formal invitation to the

(Concluded on Page 15, Column 3)

## Monopoly Charge Hits 4 Calcium Chloride Firms

WASHINGTON, D. C.—The Federal Trade Commission Aug. 4 charged four manufacturers said to control substantially the entire output of calcium chloride in the United States with engaging in a conspiracy to fix prices, and with using other unlawful methods to restrain and eliminate competition in the sale of their product.

The complaint points out that calcium chloride is used as a brine for refrigeration, as a dust laying agent in road construction and in the curing of concrete, and for treatment of dustless coal.

Named were the Columbia Alkali Corp., Barborton, Ohio; Dow Chemical Co., Midland, Mich.; Michigan Alkali Co., Wyandotte, Mich.; Solvay Process Co., Syracuse, N. Y., and its wholly owned subsidiary, Solvay

(Concluded on Page 16, Column 4)

## Prizes Are Lure In New Orleans Sales Campaign

Late-Season Drive Offers Cash Awards To Salesmen, Free Boxes To Public

NEW ORLEANS—With 90 cash awards totaling \$400 for salesmen and 20 free electric refrigerators for prospective purchasers, there are prizes aplenty in the first "Refrigeration Sweepstakes," which started in July and runs through the middle of August, and which is being conducted by New Orleans Public Service, Inc. in cooperation with the Electrical Association of New Orleans.

For every refrigerator sold during the drive, salesmen of dealers co-operating in the campaign are eligible to share in the 90 sweepstakes prizes worth \$400. Through a prize statement contest, purchasers and prospects may qualify for one of the 20 electric refrigerators offered for the best 25-word statement on "Why an Electric Refrigerator is Cheap to Buy—Cheap to Use."

Every aid is being given salesmen to help them become winners in the campaign.

Before the contest was announced, a canvass of the city unearthed

(Concluded on Page 16, Column 1)

## Sales In Summer Resort Tough But Profitable, Lone Dealer Finds

By Alfred Jones  
MACKINAC ISLAND, Mich.—"It's one of the hardest jobs in the world to sell refrigerators in a summer resort."

This is the expressed opinion of J. D. "Jerry" Pelton, hardware, household electrical supply, bicycle, and Crosley appliance dealer here in Michigan's "summer capital."

Though his limited market restricts his appliance business to more or less of a sideline, Mr. Pelton is one of Crosley's oldest dealers.

"I sold one of the first refrigerator models Crosley ever made to my

(Concluded on Page 2, Column 3)

Candid Camera Shots of Some of the Sponsors of

## The First All-Industry Exposition

To Be Held in Chicago (Stevens Hotel) Jan. 16-19



(1) M. W. Knight, Peerless of America, Inc., Chicago; (2) J. S. Coe, Chase Brass & Copper Co., Waterbury, Conn.; (3) K. B. Thorndike, Detroit Lubricator Co., Detroit; (4) Frank Gleason, Cleveland Refrigeration Corp., Sidney,

Ohio; (5) G. E. Graff, Ranco, Inc., Columbus, Ohio; (6) J. S. Forbes, Superior Valve & Fittings Co., Pittsburgh; (7) Irving Knudson, Detroit Lubricator Co., Detroit; (8) Frank Riley, Riley Engineering Corp.,

Detroit; (9) Louis Snell, Modern Equipment Co., Defiance, Ohio; (10) R. M. McClure, executive secretary, Refrigeration Supplies and Parts Manufacturers Association.

Second row: (11) H. E. Rieckelman, Fedders Mfg. Co., Buffalo; (12) N. B. Ronning, General Electric Co., Cleveland; (13) J. H. Stubbs, General Electric Co., Cleveland; (14) E. M. Palmer, Hinsdale Mfg. Co., Chicago; (15) D. H. Daskal, Perfection Refrigeration Parts Co., Harvey, Ill.; (16) J. L.

Shrode, Alco Valve Co., St. Louis; (17) William Allen, Modern Equipment Co., Defiance, Ohio; (18) R. W. Kritzer, Peerless of America, Inc., Chicago; (19) J. A. Strachan, Kerotest Mfg. Co., Pittsburgh; (20) Henry A. Henry, Henry Valve Co., Chicago.



## Dealer Shows 'Em By Running Economy Test In Showroom of Store

BIG SPRING, Tex. — Dramatic demonstrations of the freezing capacity and economy of operation of the modern electric refrigerator may cost more than ordinary displays in floors and windows, but they more than pay out in the added sales incentive they create, believes J. B. Apple, manager of Carl Strom Home Appliances here.

A recent display is typical. The store arranged a new model electric refrigerator on the sales floor, facing the window. The unit was started up and the cabinet door left open; a card told the day on which the unit was started.

### CARDS TELL STORY

In front of the unit, at the bottom, was a load meter, to show power consumption. Cards bearing messages were spotted on the open door and other parts of the refrigerator. Ribbons on each card led to the point on the refrigerator to which its message applied.

"Watch the Meter—See Proof of Economy," one card said, its ribbon leading to the meter; "Proof of Superior Freezing Ability," another card noted; "Proof of Greater Dependability," and "Proof of Low Operating Costs" were other sales messages.

The open refrigerator attracted attention. Many people came inside the store and examined the display more closely; some even felt the freezing unit, to make sure the frost on it was

real. All asked questions. The unit, shifted from one position in the store to another, was a traffic-stimulator for more than four months.

In a comparative power consumption test, the company found another strong "silent salesman" as to the value of the modern electric refrigerator.

### HOOK 'EM ALL UP

This display, semi-permanent on the sales floor, is of great value in impressing prospects with the refrigerator's operating economy.

Display group consists of a modern cabinet radio receiving set, a new refrigerator, a washer, and an early model refrigerator of the same make. The salesman hooks up first one appliance, then the other, to show by a volt meter what it costs to operate each unit. The new refrigerator uses less power in this test than any of the other appliances tested.

### 'TEST HIGHLY IMPRESSIVE'

"We find this test highly impressive," says Mr. Apple, "because the average woman somehow has the idea that an electric refrigerator uses a lot of current. The average person, for instance, will buy a large radio cabinet, use it as she wishes, and think nothing of the cost of operation; yet she thinks a refrigerator costs a lot to run. This practical demonstration does much to dispel that false idea."

## Selling Refrigerators In Resort Area Calls For Special Technique

(Concluded from Page 1, Column 5)

father here on the island," said Mr. Pelton, "and it's still in regular use."

Altogether, Mr. Pelton estimates that he has sold 30 refrigerators on the island. He also has sold seven or eight Crosley beverage coolers to restaurants, hotels, and similar places, including two installed in the Grand hotel, said to be the world's largest summer hotel.

"I sell a lot of radios," Mr. Pelton added, "more than the other appliances combined, in fact. I actually have sold as many as seven or eight radios in one day."

Speaking specifically of refrigerators, Mr. Pelton said, "I really have only two months a year, July and August, as my selling season. Practically all of the selling has to be done when visitors first come, for if they want a refrigerator in their place for the summer they want it installed as soon as they arrive."

"I stock up in the spring, and that is all my refrigerator buying for the year."

Some of Mr. Pelton's wealthier customers—and there's a nest of millionaires' homes up here—have ordered a refrigerator in advance for the following summer, with the request that it be installed and ready for use when they arrive. Such requests have been fulfilled.

Another service Mr. Pelton performs is to turn off refrigerators in

## Dealer In Vacationland



Unimpressive though it appears, this store on Mackinac Island's main street houses a profitable business enterprise which permits "Jerry" Pelton, long-time Crosley dealer, to spend his winters in Florida. The horse and wagon represents Mackinac's chief means of transportation.

the fall and turn them on again just before the owners arrive for the following season.

With the assistance of his own electrician, Mr. Pelton does all installation and service work on the appliances he sells. Deliveries must be made by horse and wagon, since no motor vehicles are permitted on the island.

Mrs. Pelton is an active partner in the business, and the personnel is completed by two boys who act as clerks in the store, do bicycle repair work, and take care of the bicycle renting department. The latter, bicycle renting, is a major part of Jerry's business in the tourist season.

It also is a means of boosting sales in the store, for vacationers who rent bicycles usually strike up a conversation with Mr. Pelton or one of the staff, and thus become good prospects for buying something.

Cold canvassing is necessarily limited by the size of the market, but whenever he hears of a resident of the island mentioning an interest in a refrigerator, Mr. Pelton arranges for a talk with the prospect.

### RICH HARD TO SELL

Mr. Pelton has sold refrigerators to many of the wealthy families who have summer homes here, among them being the Algiers of Detroit, the Swifts and Armours of Chicago.

"I've found it harder to sell to wealthy people than to middle-class families," Mr. Pelton declared. "The latter will save up a certain amount of money, and, if they decide to buy, will buy right off without hesitation."

"However, it takes a lot to talk a rich man into buying an appliance. When they do buy, though, they pay cash."

Most of Jerry's sales are cash deals, and for those that are on time he carries his own paper.

"I am convinced that this is the best thing to do instead of letting a finance company or bank handle a credit account," said Mr. Pelton.

"Cash business is preferable here on the island," he continued, "because the season is short and it is risky to expect payments from visitors who rent a place for two months and who might not come back the next summer."

### ADDED EXPENSES

"I sell refrigerators at the same price as that on the mainland, but I have to stand about \$10 extra cost on each unit for packing, shipping, and related expenses."

Northern Electric Co., Menominee, Mich., is the distributor from whom Mr. Pelton gets the refrigerators, radios, commercial beverage coolers,

and the few washers and ironers he sells.

"My distributor places an advertisement for my store in the Mackinac Island News every other week at no cost to me, and this is a big sales help," Mr. Pelton stated.

Electricity is supplied to Mackinac Island from St. Ignace, on the tip of Michigan's upper peninsula, Mr. Pelton said. Average rate for residential use is 9 cents per kw. on the island, as compared with 6 cents in St. Ignace. Rates for stores and other commercial establishments begin at about 11 cents per kw. on the island.

"I have found that the best way to sell refrigerators and other major appliances here is to take things easy and let sales happen," said Mr. Pelton, adding that at times it does pay to "plug" with greater concentration.

### POPULATION SHIFTS

A summer resort is not like any other place when it comes to being a market for appliances, he pointed out. The population is continually changing, reaching its maximum in the middle of the tourist season, and dropping off to its minimum in the winter.

Attempts have been made by other dealers on the island to create business by aggressive selling, but these attempts were short-lived, and Mr. Pelton is the only independent refrigerator dealer on the island today.

There is a branch of the Edison Sault Electric Co., electric power utility, right next door to Jerry's handling General Electric products, but Mr. Pelton is the only real dealer.

At the close of the tourist season, when Mackinac Island becomes a colony of only 550 permanent residents, Mr. Pelton puts his business in order, closes the store, and goes to Florida for the winter.

He has a home down there, and plans to open a store next season.

## Display In Refrigerator Boosts Liquor Sales

JOPLIN, Mo.—Installed in a Walgreen drug store here, a household electric refrigerator was a big factor in increasing sales of those liquors which sell best when kept cold, reports C. E. Pruitt, manager.

Refrigerator was loaned by an appliance dealer, who received credit in a small sign atop the unit. Placed in line with the display counters of the store's liquor department, the refrigerator could be opened by either clerk or customer, standing in the aisle.

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Sidney, Ohio



## THE COLD CANVASS

By B. T. Umore

(Concluded from Page 1, Column 1)  
quate. The point to be stressed is both the refrigeration and automotive industries (the latter of which is symbolized by Henry Ford) brought new high standards of living to everybody.

Men responsible for the rapid development of the refrigeration industry can well feel that they have left the world better than they found it; and so can Henry Ford and his associates in the automotive industry.

### Surprising Acclaim

Detroit's tribute to Henry Ford on his 75th birthday was of such large proportions as to surprise a great many people. Since the rise of the C.I.O., the report had begun to float around that Detroit was a "ghost town," with the substantial citizens sneaking around back alleys to keep from being blackjacked by militant Reds.

Henry Ford was the symbol of everything the Reds hate—the ruggedest of the rugged individuals. The N.L.R.B. was hot after him; so was the C.I.O.; the government likewise.

Would anyone in Detroit dare to rise in his defense?

The answer was startling. Workers as well as business and professional men turned out to do honors to the man who was acclaimed "Detroit's Greatest Citizen." C.I.O. chieftains must have been shocked no end.

To interviewers Ford declared: "Nothing will cause us to close our plants. Production must go on. We must keep on making things better and cheaper."

No C.I.O. drive, he intimates, will ever stop him. He wasn't buffaloed by the N.R.A., nor is he afraid of the N.L.R.B.

### A Great Man

Aldous Huxley, in his "Jesting Pilate," reviewed the teachings of the world's great religious philosophers, and came to approve Buddha's views very much. And then he concluded by saying that Henry Ford's philosophy of life and work was even greater than that of Buddha.

In the recent muckraking of Ford and his adamant individualism, many so-called humanitarians overlook the fact that it was Ford who first pronounced the theory that high consumption of mass produced articles calls for high wages; and who promptly proceeded to support his theory by raising wages to hitherto unheard-of levels.

They forget, also, that it was Ford who first cried out against the international financiers, that it was Ford who predicted that depression and many other evils would follow our entry into the World War, and that it was Ford who was first to foresee the necessity for decentralization of industry, and that it was Ford who presented the only real solution to the farm problem (increased use of farm products in industry).

### Philosophy of Work

Ford's philosophy centers around work as the cure for the ills of mankind. Work harder, increase production, improve quality, reduce prices—that's the cycle which he has always followed, and the formula to which he still adheres.

It is quite different from that of the New Dealers, who would have people work less, produce less, and who would keep prices up.

Ford believes that prosperity follows freedom; the New Dealers believe that prosperity is the result of control.

History will hand down the verdict. But in the meantime, in the present, the people of Detroit rise in pride to give their leading citizen a vote of confidence.

### Avery Establishes Branch

CINCINNATI—Avery Engineering Co., air-conditioning engineers with headquarters at 2341 Carnegie Ave., Cleveland, has established a branch office here.

## Fair Trade Act Upheld In Calif. Supreme Court

SAN FRANCISCO—Constitutionality of California's unfair trade practices act (as amended in 1935), which prohibits merchants selling goods below cost with intent to injure competitors and to lessen competition, has been upheld in a unanimous decision of the state's supreme court.

Probably no appeal will be made to the United States Supreme Court, as the act is concerned solely with the state's police power.

Chief Justice Waste, of the California court, stated in his opinion that the avowed purpose of the act is well within the state's police power, proper exercise of which is confined to regulation in the public welfare, inasmuch as the fostering of free and open competition obviously is in the interests of the public welfare.

"The statute embodies the concept that sales made at a loss to the seller, when made for the purpose of

injuring or destroying competition, are predatory and anti-social in character," he pointed out. "The economic wisdom of such a concept may be debatable, but being debatable, the legislature is empowered to choose between its acceptance or rejection...."

"It is our opinion that neither the due process clause, nor any other constitutional restraint, state or federal, prohibits the legislature from acting to curb predatory merchandising practices."

Retail trade associations and better business bureaus throughout the state, many of which were largely responsible for the law's enactment, naturally were elated by the decision.

The act contains plenty of teeth, among which is the provision that violations may be prosecuted either criminally or by civil action.

Under the civil section, a complaint may be filed by any citizen, on the basis of prices published in advertisements or offered verbally by salesmen, which the complainant avers to be below the cost, including overhead of the merchandise. Defendant can then be brought into court and be forced to show his actual costs.

## Wilcox, Introducer of 'Precipitron', Dies

NEW YORK CITY—Herbert M. Wilcox, manager of the new products division of Westinghouse Electric & Mfg. Co., died suddenly from heart disease July 28 while on business here.

As manager of the newly created new products division, Mr. Wilcox had an active part in introducing the Westinghouse precipitron, the company's new electrostatic air cleaner.

Born in Pittsburgh, Nov. 6, 1882, Mr. Wilcox attended Princeton university, and was graduated from Massachusetts Institute of Technology in 1905 with a B.S. degree in chemical engineering.

In 1914 he joined Winchester Repeating Arms Co. as industrial engineer, and in 1925 became commercial manager for Western Electric Co.

Mr. Wilcox resigned from this position in 1936 to join Paramount Pictures Corp., and in 1937 he joined the Westinghouse Co.

## F. C. Hansen, Australian Agent, Arrives In U. S.

LOS ANGELES—F. E. Hansen, general manager of F. C. Lovelock, Ltd., Australian manufacturers' representative, has arrived here on an extended visit to the United States, during which he will contact manufacturers and suppliers of refrigeration and air-conditioning equipment.

Mr. Hansen will go to San Francisco from here and will then leave for Chicago, planning to arrive there Aug. 13. He will remain in Chicago until Aug. 28 when he will go to Detroit, where he will stay until Sept. 11, according to his tentative plans. From Detroit he will go to Cleveland (arriving there Sept. 12) and to Pittsburgh (arriving there Sept. 15), and thence to New York to remain from Sept. 19 to Oct. 10.

In Chicago he may be reached care of Baker, Irons & Dockstader, Inc., 327 So. La Salle St.; in Detroit care of Business News Publishing Co., 5229 Cass Ave.; and in New York City, care of Baker, Irons & Dockstader, Inc., 8-10 Bridge St.

# EVERY AIR CONDITIONING MAN SHOULD KNOW

## A NUMBER OF FUNDAMENTALS CONCERNING AIR CONDITIONING AND REFRIGERANTS

**I**f the air conditioning installation is a sizable one involving a duct system, the duct system should conform to the rules published by the National Board of Fire Underwriters in NBFU Pamphlet No. 90 entitled, "Regulations of the National Board of Fire Underwriters for the Installation of Air Conditioning, Warm Air Heating, Air Cooling and Ventilating Systems" (July 15, 1937). These regulations are published by the Board at 85 John Street, New York City, or 222 West Adams Street, Chicago. See Paragraph 191 covering refrigerants and specify condensing equipment for permissible refrigerants.

If the system is a small commercial or air conditioning installation containing not over 100 pounds of refrigerant, design to conform to the "Standard For Air Conditioning and Commercial Refrigerating Equipment" (Subject 207, June 16, 1937)

of Underwriters' Laboratories, Inc., 207 East Ohio Street, Chicago. See Paragraphs 36 and 37 and draw specification for air conditioning refrigerants in accordance.

Should your client desire a unit system containing not more than 20 pounds of refrigerant, Underwriters' Laboratories, Inc., have a "Standard For Unit Refrigerating Systems" (Subject 207, June 15, 1937). Secure a copy of this standard and consult Paragraphs 29 and 30 for permissible refrigerants for air conditioning.

If you desire to consult Underwriters' Laboratories Report MH-2375 entitled, "The Comparative Life, Fire and Explosion Hazards of the Common Refrigerants," inquire at the reference desk of your Public Library. Or we will mail a copy, postpaid, on receipt of one dollar.

By following these rules, you avoid any possibility of penalty to your client in insurance rates for using refrigerating and air conditioning systems in non-conformance with regulations.

If you would be safe respecting refrigerants, specify the safe "Freon" refrigerants for air conditioning, which meet all the specifications of the National Board of Fire Underwriters and the Underwriters' Laboratories, Inc.

"Freon" refrigerants are non-toxic, non-flammable and non-injurious to foods, furs, books, paintings and other fragile and perishable articles.



\*"Freon" is Kinetic's registered trade mark for its fluorine refrigerants.

KINETIC CHEMICALS, INC., TENTH & MARKET STREETS, WILMINGTON, DELAWARE



## Profitable Sales Ideas

### Small Town Dealer Tells Why He Pays Salesmen Regular Wage, However Small

MAHANOEY CITY, Pa.—Paying appliance salesmen a regular weekly sum, no matter how small it may be, gives them a feeling of job security and a consequent confidence that makes them better producers than they would be with only the "if" of prospective large commissions, says S. W. Hepler of Hack Hardware Co. here.

Starting "cold" in the appliance field when his company took on new lines to compensate for falling sales among staple hardware lines, Mr. Hepler picked up his selling philosophy by the "hard way"—experience.

"At first we were unable to find, ready-made, the type of salesmen we needed to suit our merchandising plans, so we finally selected the men whom we thought could be trained to understand our merchandising policies," he says.

#### OTHER PLAN DIDN'T WORK

"As is usually the case with merchants first venturing into the appliance field, we employed these salesmen on a straight commission basis, on the theory that if they didn't sell we still wouldn't lose. Unfortunately, these salesmen did us more harm than good, for they didn't care a bit whether sales were made legitimately or not, as long as they received their commissions.

"To do a really effective selling job under present conditions, we found it necessary to give salesmen a greater incentive than the bait of possible future commissions. We realized that we must make these men feel that their connection with the store was as permanent as that of any of our other employees. To convey that feeling of job security it was necessary to cooperate with the salesmen, to give them an 'even break'."

#### NOMINAL, BUT REGULAR

"For that reason, we now employ salesmen with the thought that they will remain with us indefinitely, and—what's more important—we pay them a nominal but regular salary.

"This salary may be as little as \$15 a week, and every cent of it is chargeable against commissions earned, but nevertheless it gives the men something that they can depend upon. And at times this regular salary has been more effective in making the men work than has the

lure of prospective commissions.

"When we hire a man, we do not threaten him with the loss of his job if his commissions fail to equal his weekly salary for the first few weeks, for such a warning immediately makes him think that the job is not permanent.

"All we ask of the men is that they work diligently and follow our instructions. If they do that, they have little to worry about, for men who are in earnest will be able to earn their salaries, and more.

#### HELPS MENTAL ATTITUDE

"When a man knows that he has a permanent job, he is more likely to work hard than when he is always thinking of making a change to another line where selling seems less difficult and commissions larger. Consequently this method of employment has eliminated the turnover in our outside selling organization. Men employed on this basis not only become more valuable to us from year to year, but also are able to earn more for themselves.

"We consider no article sold unless it stays sold. That is why men on straight commission proved so costly to us. Having no lasting interest in the firm, they were careless about checking up on their prospects, and consequently repossessions were frequent.

#### THEY'RE 'STAYERS'

"This trouble has been eliminated by employing better salesmen on a basis which makes them stick. These men realize that most repossessions result from business solicited from irresponsible customers and to misrepresentation of merchandise. So today we are doing business only with people who buy with the intention of keeping their purchases and paying for them.

"All our sales work is based upon personal contact. Each salesman develops his own prospect list. Once a name is placed on one of these lists, we begin sending out direct-mail pieces, not in an attempt to bring the prospect into the store to make his purchase, but rather in an attempt to aid the salesman in his selling job.

"We have found the 'survey' method of contact to be the most successful means of developing live

prospects for our electrical lines. Instead of approaching the housewife with a selling talk on any specific article, the salesman first asks her what appliances she owns, how old each one is, and whether or not each is in satisfactory condition. From this he is able to determine which appliances she is most apt to be interested in.

#### ACTIVITY SHEETS

"Our salesmen are furnished with daily activity sheets on which to record this information and any other pertinent facts about each interview. These sheets are returned to the office at the end of each day, and a clerk copies the names of all live prospects on file cards which are filed under the date on which the next call is to be made.

"Each morning the salesman is given the cards of the prospects who are to be called upon that day. After each call, he notes any further information on the card, and returns it to the file.

#### HOW RECORDS ARE KEPT

"A complete record is maintained of every item sold by our salesmen. Each refrigerator, for instance, is listed by serial number on a sheet which also gives the date of sale and the customer's name, as well as the name of the salesman who closed the deal. Repossessions and resales also are noted on this same sheet.

"This record book serves as an inventory record of all unsold merchandise," Mr. Hepler points out, "and also makes it possible for us to trace the history of any particular item from start to finish."

### Scattered Pots & Pans Make Kitchen 'Homey' And Draw Prospects

BOULDER, Colo.—Complete with the "homey" touch of scattered pots and pans, dishes in the dishwasher, and a bundle of laundry in the closet, the all-electric kitchen display in the local branch of Public Service Co. of Colorado has provided a 15% stimulus to the company's appliance sales, reports G. A. Pratt, business manager.

Located in a corner of the display room, in such a position that it can be viewed from the street, the kitchen is equipped with refrigerator, range, dishwasher, clock, waffle iron, and all of the other kitchen conveniences which lighten the housewife's tasks.

Mr. Pratt believes in letting the customers poke around the display by themselves for a while, before being approached by a salesman. "It gives them a chance to notice every detail of the kitchen," he explains, "and to fully appreciate its attractiveness, convenience, and labor-saving qualities." Then when the salesman sees an opportune time to approach, he points out the economy of operation and answers any questions which the prospects may have.

Sales also are stimulated by using the kitchen as a meeting room for some of the city's clubs. At each of these meetings, the floor is cleared and supper for the group is cooked gratis in the model kitchen, giving club members a chance to see the ensemble in actual use.

## Book Review

### 'Sentences That Sell'

"Tested Sentences That Sell." Author: Elmer Wheeler. Publisher: Prentice-Hall, Inc., 70 Fifth Ave., New York City. Price: \$3.75.

A "tested selling sentence" is Mr. Wheeler's term for a sentence that will make more sales than any other single sentence.

It is one that has been tried on hundreds of customers, and has produced results with "scientific precision"—that is, by making sales with constant percentages.

Every organization realizes only too well that its success depends, to a great degree, upon the words that come out of the salesman's mouth as he stands face to face with his customers.

The best merchandise won't sell itself . . . the best looking dotted line won't sign itself. Every sale requires a salesman who will stand by, and, through the proper use of words and sales techniques, make the prospect want to buy.

#### TESTED WORDINGS

That's what this "Tested Selling Sentences" book is designed to equip the salesman to do. Mr. Wheeler's library of selling sentences contains more than 105,000 word combinations and selling methods, it is said. These have been tested on more than 19 million people by such clients as Hoover Co., Johns-Manville, The Texas Co., Hotels Statler Corp., R. H. Macy & Co., and others for whom Mr. Wheeler is consultant.

Five "Wheelerpoints," or basic selling phraseology points, are given in the book. Briefly, they are:

#### 'SELL THE SIZZLE'

1. "Don't sell the steak—sell the sizzle!"

The "sizzle," says Mr. Wheeler, is the biggest selling point in a sales presentation. The "sizzling" of the steak starts the sale more than the cow ever did—though the cow is very necessary.

Hidden in every product are "sizzles." Find them and use them to create interest, desire, and eventual purchase of your product, the author advises.

#### 2. "Don't write—telegraph!"

Get the prospect's immediate attention, in the fewest possible words. Talk telegraphically . . . make every word count.

Your first 10 words are more important than your next 10,000, Mr. Wheeler says. People make up their minds about you in the first 10 seconds. If you don't make your first message "click," the prospect leaves you mentally, if not physically.

#### '... WITH FLOWERS'

3. "Say it with flowers!" In Mr. Wheeler's opinion, this means simply, "prove your statements" . . . support your words. "Happy returns of the day," when accompanied by flowers, proves you mean it, he says.

"You have just 10 short seconds and two able hands to sell the prospect," he says, "so fortify your words with performance . . . drama . . . action . . . proof!"

4. "Don't ask if—ask which!" Never ask a prospect if he wants to buy . . . ask him which, when, where, and how, Mr. Wheeler advises. Always give him a choice between something and something—never between something and nothing.

When your prospect offers an objection, ask him why. The word "why" is one of the hardest in a salesman's vocabulary to answer, Mr. Wheeler asserts. The prospect's objection will grow smaller and smaller, as he finds it difficult to answer.

#### 'DON'T BARK'

5. "Watch your bark." "Consider how much a little dog can express with just one word, and one tail to wag," Mr. Wheeler asks. "What he can do with the tone of his 'woof' and the wag of his tail in conveying his many messages is well worth emulating.

"Watch the 'bark' that can creep into your words. Watch the 'wag' behind your words. Remember, it's as much in the way you say it as in what you say."

### Dealer Keeps Tab on Appliance Sales By Daily File Sheet

BATON ROUGE, La.—W. L. Man-ship, electrical appliance dealer, knows just how sales of refrigerators, radios, washing machines, etc., are going all the time, by means of a special daily file sheet which he keeps for each month.

The sheet carries the name of the month at the top; the date down a left hand column, and, as column headings, the notations "received on account," "cash sales," "charge sales," "deposit out," "tax," and "bank balance," all expressed in dollars and cents.

Also listed are "radios, new and used"; "refrigerators, new and used"; "washing machines, new and used"; and repossessions of radios, refrigerators and washing machines, under each of which heading the number of machines sold is written in. A final column heading gives radio trade-in figures in dollars and cents.

This information supplements that already in company books.

### G-E Laundry Will Promote Gas-Powered Washers At Rural District Fairs

BRIDGEPORT, Conn.—Timed to tie-in with the usual fall cycle of state and county fairs and similar events attracting large numbers of rural residents, a cooperative drive to sell washing machines powered by Briggs & Stratton gasoline motors to the farm market will again this year be backed by the home laundry equipment section of General Electric Co.

Literature, display pieces, and advertising is being prepared for this campaign, and General Electric Co. is recommending active participation by all G-E distributors in rural areas. The company suggests carrying this washer message to the farmers via booths or tent exhibits at fairs, husking bees, tractor shows, and other spots where farmers congregate.

Optimism regarding the campaign's outcome is supported by the fact that crop reports from all parts of the country indicate a large and spendable farm income.

### Anaconda Copper Refrigeration Tubes for difficult jobs!

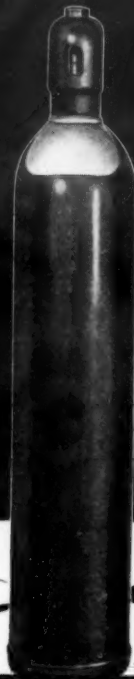


## DRY dry as Sahara

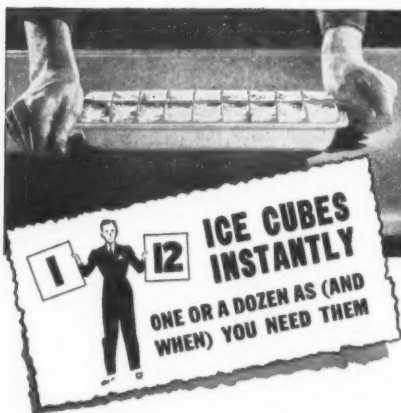
ANSUL CHEMICAL CO.  
MARINETTE  
WISCONSIN



ANSUL  
SULPHUR  
DIOXIDE  
METHYL  
CHLORIDE



## PRESTO ICE TRAY HAS WHAT IT TAKES



There is no doubt about it—the greatest need for ice cubes is on those frequent daily occasions when one, two, or three persons want a few ice cubes in a hurry. And only Presto Tray with Rubber Grid has what it takes to give one or a dozen cubes instantly, full-sized, cold

and dry, without disturbing the others. No fuss! No bother! No waste!

In less time than it takes to tell, your salesman can demonstrate conclusively how only the Magic Finish Presto Tray with Rubber Grid gives all the advantages of a fast-freezing metal tray plus all the conveniences of a rubber grid.

If you have not already done so—be sure and insist that your new refrigerator come factory-equipped with Magic Finish Presto Ice Trays.

INLAND MANUFACTURING DIVISION  
General Motors Corporation Dayton, Ohio

WHEN A FEW ICE CUBES ARE PLENTY... DON'T RAID A TRAYFUL... USE  
**PRESTO ICE TRAY** with Rubber Grid



# Air Conditioning

## Variety of Uses of 'Store Conditioners' Noted In Installations Made By Natkin

TULSA, Okla. — Introduction of Westinghouse Unitaire hermetically sealed conditioning units in 3½ and 2½-hp. capacities has opened new markets for air conditioning in eastern Oklahoma, reports Bert Natkin of the local office of Natkin & Co., distributor.

The new package air-cooling units can be installed within seven days of the time the order is received, Mr. Natkin states, and may easily be moved from one location to another at the desire of the owner. Although the units were designed primarily for use in retail stores, they are finding a ready market in certain office applications where the load is greater than can be carried by the conventional room cooler, Mr. Natkin finds.

Finished in crackle brown, the Westinghouse units are approximately 8 feet high, 2 feet deep, and 3 feet wide. They are complete with compressor, coils, fan, and automatic temperature control.

During the International Petroleum Exposition held in Tulsa this spring, two Unitaires were installed in the exhibit building of the National Supply Co. in connection with its display. These two units provided cool comfort for thousands of visitors to the National Supply exhibit, Mr. Natkin reports.

One self-contained Westinghouse unit is used to condition the Tulsa branch office of Natkin & Co., to demonstrate the operation of the conditioner and provide comfort for employees.

Installation of the Unitaire with a duct system was demonstrated in the general offices of the Patterson Steel Co., Tulsa, where a unit was installed to condition the office of N. R. Patterson, president of the company, together with three small adjacent offices. The conditioner is installed in one of the small offices, and return grilles are provided in a common wall for the return of air to the unit.

Another Unitaire has been installed in a closet adjacent to the Thompson barber shop, on the main floor of Tulsa's Thompson building. All that is visible to the customers is a supply grille in the wall over the door, and a return grille placed in the door of the closet.

At Tahlequah, Okla., a Westinghouse unit provides comfort for the general manager and employees of the City Water & Light Department. Installation was made in the general offices of the department.

One 3½-ton self-contained conditioner has been installed in the Staus drug store in Tahlequah, Okla.

The private office of C. E. Burlingame, and three adjacent offices in the C. E. Burlingame Corp. at Bartlesville, have been conditioned with a Unitaire 2½-ton unit.

All of these installations are giving satisfactory results, Mr. Natkin reports, and he believes that this type of air-conditioning equipment has a growing appeal to the public. Speed and simplicity of installation, at a minimum of expense to the owner, seem to be among the things that interest buyers most, he finds

## 'Spot Cooling' of Bottle Workers Improves Summer Production In Glass Factory

FAIRMOUNT, Ind.—Spot cooling of workers engaged in the manufacture of bottles at the Fairmount Glass Co. has resulted in better production during summer months, more efficient handling of glass at high temperatures, reduced breakage, and more comfortable working conditions.

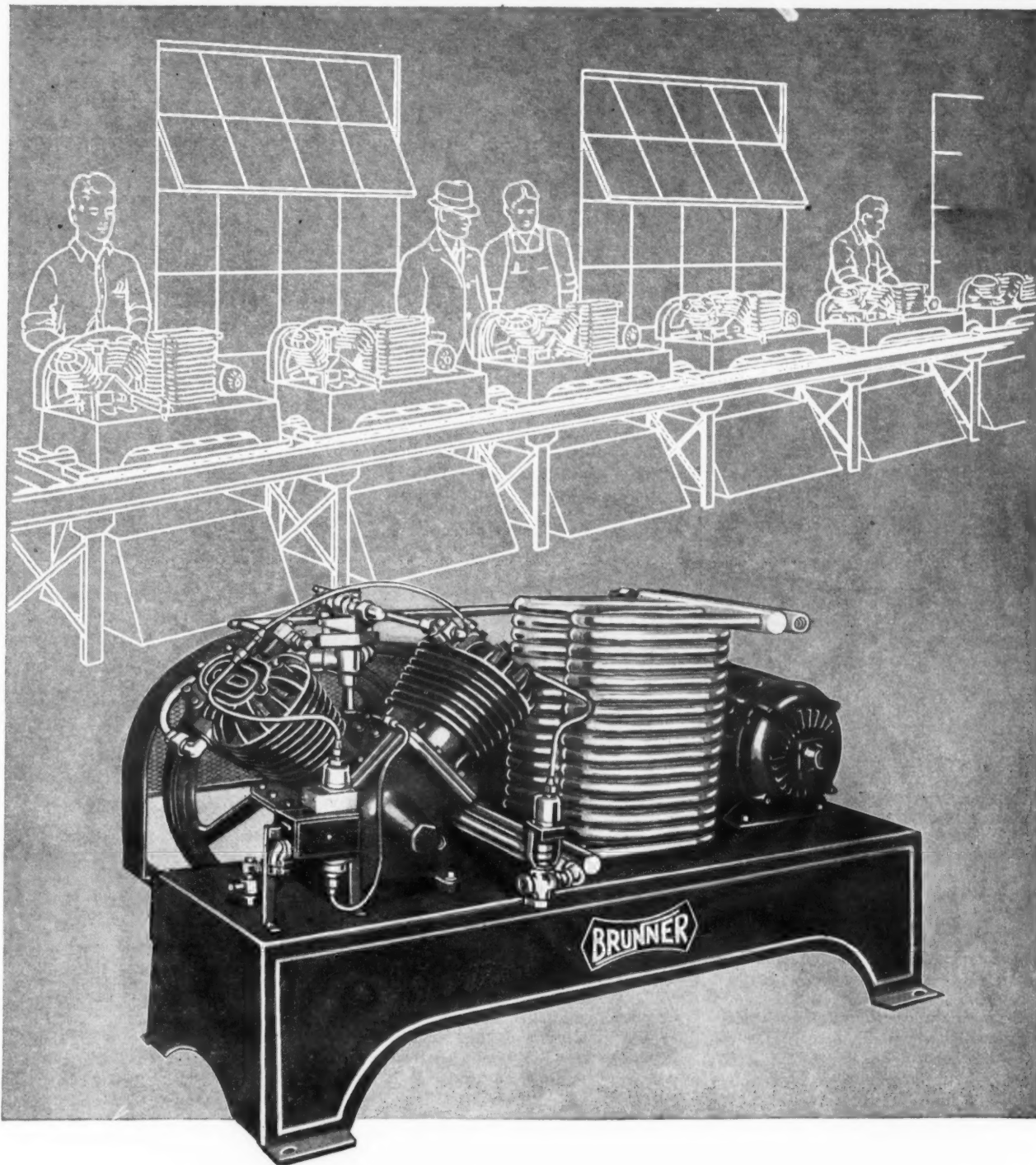
Bottles of all sizes are produced

in the Fairmount plant here. Because of the excessive heat generated by the presence of molten glass, air temperatures in certain parts of the building rose to 150° during hot summer weather, causing workers to be overcome with heat.

Because of the great size of the two-story factory space, no attempt was made to cool the entire building.

Air was introduced to the workers by means of small ducts, located at a point just over their heads. By this method of "spot" cooling, vital working areas were reached at a minimum of cost.

Air is directed to the specific points where it is needed by ducts running from a fan house located outside the factory itself. Here a 43,000 c.f.m. centrifugal blower draws air through Trane type R coils, which are supplied with 100 g.p.m. of 54° water. These coils drop the air from 100 to 70° before it is supplied to the factory space.



## THE ALL-IMPORTANT "TRIAL RUN" IS UNDER THE EYES OF EXPERTS

Condensing units are like human beings in this respect: during the first hours of existence they need the care and attention of specialists. That is why the Brunner assembly and run-in is so elaborate. Every last detail of construction is checked while the unit operates under actual service conditions. Alignment of all parts—shaft, bearings, pistons—is made certain. Valves are studied for quietness and for seal. The lubrication system checked. Then—if the unit in final tests measures up to the Brunner requirement for refrigerating efficiency—it receives the Brunner nameplate and is ready for the "firing line" of duty...Why not get the whole Brunner story? See how Brunner engineering has put mechanical refrigeration on a more dependable basis. The Brunner line comprises Brunner Refrigerating and Air Conditioning equipment, air and water cooled, from ¼ to 15 H.P. Catalog on request. Brunner Manufacturing Company, Utica, N. Y., U. S. A.

IT'S **BRUNNER**  
FOR *economical* SERVICE

## Trane Enters Gas-Heating Field With Two Lines Of Unit Heaters & Winter Conditioners

LA CROSSE, Wis.—Announcement of two complete lines of gas-fired unit heaters and gas-fired winter air-conditioning units heralds the entrance of Trane Co., manufacturer of air-conditioning equipment and steam specialties, into the forced-air heating field.

Executives of the Trane organization state that their entrance into the gas heating field was dictated by the company's knowledge of heat-transfer surfaces, its 50-year experience in heating and air conditioning, and its knowledge of controls.

Trane gas air conditioners are available in both the suspended type (three models) and the floor type (three models). B.t.u. input of the units are 90,000, 120,000, and 180,000 per hour, for residential use.

The conditioner may be suspended from the ceiling of the basement of the building served, or may be supplied in a "table" model, mounted on legs.

Both models are completely assembled at the factory, resulting in lower installation costs. The units contain filters, fan, motor, drive, heat-exchanger unit, gas control valves, and humidifier. Cooling coils for use during summer months are optional.

Trane engineers assert that the new winter air-conditioning unit may be controlled from a thermostat mounted on the equipment, instead of in the house, if the basement room where the furnace is located is to be heated. This practice reduces the amount of wiring necessary with the usual thermostat mounting in the living quarters of the residence.

The conditioners are equipped with the Trane "safety control," which combines gas pressure regulation, automatic main gas valves, safety pilot control, high temperature cut-off, and reset mechanism.

Another safety device employed on the Trane conditioner is the "sail switch." This control has a "sail" which is held in a horizontal position by moving air from the fan. Should the fan stop, the "sail" drops to a vertical position, throwing the mercury bulb switch, which automatically cuts off the flow of gas to the unit. Thus, if for any reason the flow of air stops, the gas supply

stops, and there is no danger of excessive temperatures.

The gas burner used with the Trane conditioners is of special design. It incorporates a multiple "blue-streak" burner with individual bullet-nosed foil spuds, orifices, and a streamlined burner body.

Single file gas ports on the individual burner bodies provide maximum air supply for complete combustion. Each burner is a self-contained unit, with die-formed venturi mixer. Each burner tube is placed directly below a flue leading to the heat exchanger.

The new Trane unit heaters also are supplied in three models, with input ratings of 45,000, 65,000, and 85,000 B.t.u. per hour. They are available in suspended type, for commercial and industrial application, or in attractive furniture steel housings for space heating in small buildings.

The units are equipped with built-in thermostats, sail switch, and a "fusible link," which offers protection against over-heating.

### Quick Service Promised By Room Cooler Dealer

BIRMINGHAM, Ala.—To corral late-summer room cooler business, Shook & Fletcher Supply Co., Carrier dealer, is stressing quick installation and a special price of \$298 in a current radio advertising program.

Quick installation appeal is aimed at prospects who may be impelled by late summer heat, but who demand fast service. Cool weather hampered early summer room cooler sales here.

### New Jersey G-E Distributor Moves To New Quarters

NEWARK, N. J.—Northern Air Conditioning Corp., distributor for General Electric air conditioning, cooling, and heating equipment in northern New Jersey, has moved from 382 Central Ave. to new quarters at 21-23 Central Ave. New quarters for the firm, which is headed by R. F. Perrott, have been completely modernized, including conditioning.



# Locker Storages

## Ford V-8 Motor Installed To Handle Any Emergency Need In Indiana Locker Plant

ANGOLA, Ind. — Angola Frozen Locker Storage Co., with 400 lockers of 300-pound capacity, has been started here by W. O. Longnecker, who has had 17 years of active experience in designing and installing institutional refrigerating systems.

As a result of personal solicitation, 50 lockers were rented before the plant was placed in operation. Then Mr. Longnecker had a circular, describing the locker plant and its advantages, printed and mailed out to both rural residents and townspeople, and from the rate at which applications started to come in it appeared that the plant would be completely occupied by Aug. 1.

To house the plant, Mr. Longnecker purchased a building formerly occupied by a creamery company. This building is just two blocks from the central business district, which Mr. Longnecker considers an advantage inasmuch as the location will be convenient for both rural and urban customers.

To provide for every emergency, a Ford V-8 motor will be installed and connected thermostatically to the two 7½-hp. 4x4 compressors and the one 3½-hp. 3x3 machine. Should anything happen to the generators, or should the electric service be temporarily impaired, the motor will start automatically and operate the compressors without interruption.

Lockers will rent for \$12 a year, payable in advance. In addition to renting locker space, however, the company plans to maintain the usual butchering, processing, and marketing services.

Processing charges will not exceed 1½ cents per pound. Two cents a pound usually will be charged for grinding hamburger, making sausage, and rendering lard.

A farm sales service will be supplied, the company butchering the meat, storing the portion which the farmer desires for his own use, and finding a buyer for the remainder. The company will handle this excess meat, or effect its sale, at a gross profit approximating 1 cent per pound.

Butchered meat will be first care-

fully cleaned and then hung in the chill room, where it will be cooled and aged as desired. Next it will be taken to the processing room, to be cut up and packaged according to the customer's wishes. Then it will be labeled and placed in the sharp freezer, where the temperature is below zero, and finally it will be placed in the customer's locker where it will be kept at a temperature of 10° F.

One cent per pound will be charged for this cutting, wrapping, and quick freezing process. The company will not engage in direct retail sale of packaged products in less than 10-pound lots.

A 20 x 30-foot curing room will be used for hams, pork shoulders, and bacon. This processing, too, will be done at the rate of 1½ cents per pound, plus 25 cents for curing.

Mr. Longnecker has estimated that income from services in addition to locker rentals will be at least four times that derived from the lockers themselves. The plant will afford year-around employment for at least seven people.

## Lyon Metal Introduces New-Type Locker For Storages

AURORA, Ill.—A new type of locker for use in locker storage plants has recently been announced by Lyon Metal Products, Inc. here.

The new locker has angle steel door frame and reinforced body corners, which are said to allow perfect door alignment and assure plenty of strength to hold the contents of the lockers fully loaded. The full-loop, non-slip hinge is permanently welded to the door frame, and attached to the door itself with a heavy bolt.

Doors are finished in cream enamel, frames in a harmonizing green, and the body in a neutral gray enamel, to provide a light interior. Complete information on the new product may be obtained from the company.

## Methods of Preparing Fruits & Vegetables For Freezing Process

By Ruth Cessna & H. Plagge\*

THE preservation of fruits and vegetables by freezing has been used commercially for a number of years. Temperatures used for the storage of meats in refrigerated lockers are in many instances sufficiently low for both fruits and vegetables.

Storage temperatures of 10° F. are considered low enough for frozen fruits, but 0° F. is recommended for frozen vegetables. Many kinds of fruits and vegetables are adapted to freezing preservations, but certain varieties are more suitable than others. The kinds and varieties listed in the tables are adapted to Iowa and may be preserved by freezing.

### GENERAL DIRECTIONS FOR PREPARING FRUITS

1. Sort fruit carefully, using only firm ripe fruit.
2. Wash thoroughly in cool water, and drain.
3. Mix with dry sugar or syrup according to directions below. Syrup is preferred. Avoid crushing fruit. Syrup should be cool before pouring over fruit.
4. Pack in glass jars, enamel-lined tins or paraffined cups. The containers which may be tightly sealed are preferred for long periods of freezing.
5. Allow fruit to stand four to six hours in cold storage with syrup or sugar before freezing to permit penetration of sugar. Allow ½ inch for expansion.
6. Freeze at 0° F. and store at 0° to 10° F.

### PRESERVING VEGETABLES

(Frozen vegetables are entirely safe for consumption if carefully handled and if cooked immediately upon thawing.)

### GENERAL METHODS

1. Do not use over-mature vegetables, carefully sort out defective specimens. Pack and freeze same day harvested.
2. Thorough washing is very important; then drain and prepare as for serving.
3. Scald vegetables according to time table below.
4. Cool immediately in cold water.
5. Select containers as for fruits. Air tight containers are recommended, since locker room temperatures are frequently too high.
6. Pack with brine according to directions, unless storage temperature is 0° F. or lower.
7. Allow ½-inch space for expansion for containers of one quart size or less.
8. Freeze at 0° F. or lower, store at 0° or lower.

\*Cooperative Extension Work in Agriculture and Home Economics, Iowa State College of Agriculture and Mechanic Arts and the U. S. Department of Agriculture cooperating.

## Locker Plant Data In New Mills Booklet

CHICAGO—To promote the use of Mills refrigerating equipment in locker plant installations, Mills Novelty Co. has issued two booklets on locker storage, which it terms "a new method of foodstuff distribution."

One pamphlet, of a more or less general nature, tells how locker plants originated, and of the part they play in the rural community today.

It goes on to describe the various types of plants, tells briefly how to lay one out and what equipment to install in it, and then explains the purpose and characteristics of each

of the various rooms. This folder concludes with a paragraph or two on locker plant costs and estimated incomes.

The second bulletin is more of a technical nature, designed to give dealers of refrigeration equipment some idea of the requirements for locker plant installations. A diagrammatic layout of a locker storage plant is given, complete with measurements and temperatures indicated.

## Joliet To Get Storage

JOLIET, Ill.—Plans have been prepared here for remodeling of an old building and installation of a modern cold storage plant at Ottawa and Clinton Sts. here.

## Table For Packing Fruits

Kind of Fruit	Varieties	Method of Packing*
Strawberries	Senator Dunlap Premier Blakemore	3 parts of berries to 1 part of dry sugar; or 3 parts of berries to 1 part of 40 or 50% syrup.
Raspberries (Black and red)	(Black) (Red) Cumberland Latham Black Pearl Chief	3 parts of berries to 1 part of dry sugar; or 3 parts of berries to 1 part of 40 or 50% syrup.
Cherries (Red, pitted)	Montmorency Early Richmond English Morello	3 parts cherries to 1 part of dry sugar; or 3 parts of cherries to 1 part of 40 to 50% syrup.
Gooseberries and Currants	(Gooseber.) (Currants) Downing Cherry Carnie Fay	2 parts of berries to 1 part sugar; or 2 parts of berries to 1 part of 50 to 60% syrup.
Plums	Monitor Red Wing Underwood	Slice then pack 3 parts plums to 1 part sugar; or 3 parts plums to 1 part 60% syrup.

\*The proportions of sugar to fruit and concentrations of syrup given are those generally used. Other mixture proportions may be used according to individual tastes. Proportions of fruit to sugar are based on weight, not volume proportions. Approximate syrup concentrations may be prepared as follows:

40% syrup use 1½ cups sugar to 1 pint of hot water.  
50% syrup use 2½ cups sugar to 1 pint of hot water.  
60% syrup use 3½ cups sugar to 1 pint of hot water.

Berries are sometimes packed three parts fruit to one part of sugar and four parts fruit to one part of sugar, according to the intended use of the product. The proportions are calculated on a weight basis.

## Table For Packing Vegetables

Kind of Vegetable	Variety Suitable For Freezing	Method of Preparation	Method of Packing
Asparagus	Mary Washington	Sort, wash, scald 2 to 3 minutes in boiling water. Chill thoroughly, pack.	Cover with 2% brine or pack dry without brine.
Lima Beans	Henderson Bush Burpee Improved	Sort, shell, scald in boiling water, 2 to 3 minutes according to size, cool.	Cover with 2% brine or pack without brine.
Snap Beans	(Green Pod) Burpees Stringless Giant Stringless (Wax Pod) Pencil Pod Black (Pole) Kentucky Wonder	Sort, wash, drain, snap, break, scald 2 to 3 minutes in boiling water according to size. Cool, pack.	Cover with 2% brine or pack without brine.
Peas	Little Marvel Thomas Laxton (Possibly other 65-day varieties)	Shell. Scald in boiling water for ½ to 1 min. Cool and pack.	Cover with 2% brine or pack without brine.
Corn	(Yellow) Golden Bantam Golden Cross Ban. Tendergold Hybrid (White) Country Gentleman Stowell Evergreen	Scald 4 or 5 minutes with husks removed. Cool thoroughly. Cut corn off the cob. Pack. (Corn on cob is more difficult to process.)	Cover with 2% brine or with 2% brine and 6% sugar. Or pack without brine.

\*Dry packs not recommended unless storage temperature is 0° or lower. Brine packs for most vegetables give better results even with storage of 0° F. Two per cent brine-four teaspoons salt to one quart of water.



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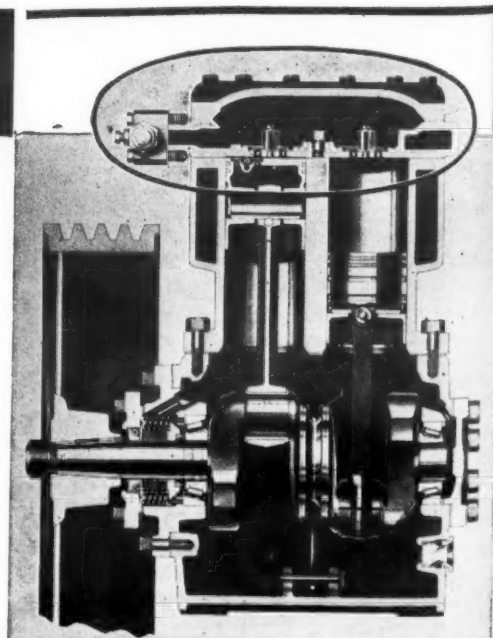
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## Commercial Refrigeration

### Refrigeration System Is Basic Equipment In Plant Where Eggs Are Processed For Bakers

LOS ANGELES—Frozen eggs for the baker, packed when they are available at lowest prices, and kept for any desired length of time at 10° F.—that is the recent accomplishment of a Pacific Coast firm. A small plant has been built for the purpose, and thousands of dozens of eggs already have been processed and frozen in cans, then placed in storage for future use.

Process is simple, the eggs being broken, beaten with a huge beater until thoroughly mixed, poured into a standard-size can holding about 70 lbs. of "batter," and frozen in a sharp-freeze compartment. This small section, inside the regular storage compartment, is held at -10° F. Cans of eggs are held in it for about three days.

Egg-processing plant consists of an electric refrigeration unit, installed in its own compartment along one wall of the large storage chamber. Operation is automatic, providing for temperature adjustment whenever necessary to maintain a predetermined temperature.

Storage compartment is about 20 feet square, and the sharp-freeze room, in one corner, about 6 feet square. Cans used for storage are of medium weight tin, similar to large lard cans; the lid, when closed down tightly, makes the containers practically air-tight.

In this particular instance, eggs used are under-standard in size, irregular, and off-colors that do not grade up well with local requirements. Use of the smaller eggs provides a market for all eggs, the larger ones being graded according to requirements.

Disposing of smaller eggs in this manner also removes them from local markets, where they are normally slow sellers, buyers preferring the medium and large-sized ones. Egg producers also are satisfied, since all their shipments will be purchased, either by markets or by the egg packing plant.

Two operators crack the eggs over a sheet-iron blade standing erect in a trough of similar material. The trough slopes, and the eggs pass into a container, from which they are strained through cloth into another container, emptying into a beater.

After a few turns of the beater, the eggs are transferred to storage cans and put at once into the sharp-freeze compartment. Eggs which do not measure up to minimum standards are thrown into a discard container just below the trough.

In states where eggs are not graded by law, or where size and weight requirements do not enter, or where price control does not set a standard year-around price, use of the process would offer a much wider profit, operators of the plant say, since the eggs could be bought in the warmer months, and held in containers until higher winter prices prevail.

For general baking purposes, the eggs thus processed are said to be as good as "fresh" eggs, and their acceptance by bakers is reported as favorable.

Plant in question was constructed with a definite potential capacity, based on demand for the product, but within a few months both supply and demand showed it to be too small, operators report.

#### Georgia Power's 6-Month Sales Total \$58,573

ATLANTA—Sales of commercial refrigeration and water-cooling equipment by Georgia Power Co. men totaled \$58,573.13 during the first six months of this year, according to company reports.

Sales of ventilating equipment during the same period totaled \$8,350.07; with air conditioning totaling \$2,468; cooking and heating equipment, \$18,663.59; and water heaters, \$4,831.19.

Columbus division of the company led in commercial refrigeration and water-cooling sales for the half-year, totaling \$12,623, with Macon second, with \$10,408, and Rome third, with \$9,627. Columbus was the only division reporting air-conditioning business for the period, accounting for the full \$2,468 total in this department.

#### Pasadena Fruit Freezing Plant Adds Equipment

PASADENA, Calif. — Additional machinery is being installed in the Pasadena plant of the California Consumers' Corp. of Los Angeles for the quick freezing of asparagus and lima beans. These activities will supplement the freezing of orange, lemon, and grapefruit juice under the "Trujis" label.

For fast beverage cooling with positive temperature control—

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457 N. Artesian Ave., Chicago

**M&E Compressors**  
EST. 1866



**MERCHANT & EVANS CO.**  
Phila., Pa., U.S.A. Plant at Lancaster, Pa.

#### Tennessee University Plans Conference on Food

KNOXVILLE, Tenn.—A two-day Food Preservation Conference will be held at the School of Engineering of the University of Tennessee here, Oct. 20 and 21. Program for the sessions is in charge of Mack Tucker, representing the food conference committee of American Society of Refrigerating Engineers, of which Dean Willis R. Woolrich of the University of Texas is chairman.

Topics to be discussed will include quick freezing, food marketing, agricultural aspects of the food industry, and other current problems of interest to the food industry and refrigeration.

Guests will inspect the laboratories of the university, where experimental work is being conducted, and other points of interest in and around Knoxville.

On a program to be announced later, it is planned to present a dozen speakers on various specialties, from various sections of the country.

Council of the A.S.R.E. has been invited to hold its fall meeting in Knoxville the same week the food meetings are in progress.

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**ARTIC THE PREFERRED METHYL CHLORIDE FOR SERVICE WORK**

### Store Installs New Fur Storage Vault; Old Vault Provides Bargain, But Users Prefer New One

KNOXVILLE, Tenn.—A new fur storage vault equipped with a York refrigerating system which maintains temperatures within a range of from 40 to -12° F. is rapidly boosting fur coat business for Miller's here, states Fred Ramsey, in charge of the women's ready-to-wear department.

The new storage vault gives Miller's a capacity for 5,000 fur coats, for the old storage vault is being kept in use for fur coats not cleaned. All garments put into the new vault are thoroughly cleaned.

Blankets, high quality woolen garments, steamer rugs, fur rugs, and similar articles may be stored in the new vault in addition to fur coats.

#### INSULATION USED

Ceiling, walls, and floor of the new vault are insulated with 4 inches of corkboard set in asphalt, and additional insulation is provided by heavy cement on the exterior.

The refrigerating system automatically holds the temperature at about 40° F., and periodically drops it to 12 below freezing to destroy any moths or larvae which may be present.

This special type of refrigeration has a system for cold air distribution which is said to insure complete circulation every two and a half minutes, with a uniform temperature throughout the room.

Disinfecting gas is also circulated occasionally to kill any moths. All

furs are cleaned by professional fur cleaners without the use of gasoline or similar agents. Between 15 and 25 employees in Miller's fur workroom prepare the garments for storage and do repair work.

Each garment is insured according to its owner's evaluation.

Garments may be stored without being cleaned, a new service offered by the company. These furs are put through a blowing and beating process, placed in the old storage vault, and while in storage are disinfected to kill moths and counteract odors.

The old vault is smaller than the new one, but is said to be equally well insulated and refrigerated, being cooled to sub-zero temperatures at times to kill moths and larvae.

This special offer of storage in the old vault costs less, but almost 90% of the company's customers have their coats cleaned and stored in the new vault, Mr. Ramsey declared.

#### ADVERTISING METHODS

The fur storage service is publicized by announcements printed on envelopes containing monthly bills, by letters to customers who purchased furs, by telephone calls to customers reminding them that it is "moth time," by pictures and advertisements in newspapers inviting inspection.

Free storage of furs purchased during the summer is offered to stimulate buying during the slow season, lists of prospects being prepared for notification of the offer.

### Londoners Given Taste Of Frosted Foods By British Subsidiary

LONDON, England—Frosted food made its first bow to Londoners recently when a luncheon was served at Grosvenor House to introduce the quick-freezing process to the British public.

The menu, composed entirely of food packed by the quick-freezing process in the United States a year ago, consisted of iced clear soup, red perch meuniere Bretonne, roast stuffed turkey, sweet corn, lima beans, green peas, olive potatoes, broccoli, sliced peaches with vanilla ice and cream, and sweetmeats.

Cartons of meat, fish, vegetables, and fruits also packed a year ago were displayed just as they are sold and displayed to American consumers.

A film demonstrating the frosting process was shown, with explanatory comments being given by Gardner Poole, senior vice president of Frosted Foods, Inc.

Robert Ducas, managing director of Frosted Foods, Ltd., new British subsidiary of Frosted Foods, Inc., reported that "our parent company anticipates a pack this year worth \$15,000,000, and the officials are satisfied that the rate of consumption of frosted foods will continue to increase as it has during the past eight years.

"The industry is in its infancy," he commented, "and stands today in probably the same position in which canning stood 20 years ago."



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## Cultivate Your Farmers!

AUTUMN means "fall" in the language of refrigeration merchandisers. Household and commercial refrigeration, packaged air conditioners, and many household appliances have sales curves which perennially do a nose dive in the autumn, despite extraordinary efforts on the part of a few firms.

Radios, judging from the past, should pick up; and so should stokers, burners, and space heaters.

### Rural Market Real Life-Saver For Refrigeration

But even the organizations which are all set to plunge into the sale of heating equipment this fall should not overlook the farm market, which promises to be exceptionally fruitful this year. And as for those concerns which concentrate on refrigeration and air conditioning, the farm market should be looked upon as a real life-saver.

Salesmanagers have been doing a lot of talking about rural prospects this year. The NEWS has pointed out the possibilities of this market on more than one occasion. But little, we hear, has been done about it. Going out in the country to make calls is a lot of work, especially when there are prospects right there in town.

### More Time In Autumn For Country Calls

Now that the selling season is closing, however, salesmen and dealers should have more time on their hands to take little drives out into the country. They might find a lot more prospects out there than they would have believed.

Rural electrification, pushed both by the government and by private utilities, has proceeded at a rapid rate. Non-electrified farms can well be served by kerosene units, gas-engine-driven refrigerators, and even (this applies particularly to radios) by windmill battery chargers.

Important note at this point: Farm income is high.

To begin with, there are the government payments, based on acreage reduction. This is cash money, of the easy-come-easy-go variety.

Second, it is reported that rural indebtedness is now substantially reduced, which releases a portion of the farmers' income for new purchases.

### Bumper Crops Expected In All Grains

Third, bumper crops are expected, despite the reductions in planting. This is one of those years when Nature has been bountiful, when sun and rain have cooperated to give heavy yields.

Wheat production, the Bureau of Agricultural Economics reports, will likely exceed records for all previous seasons except 1915. Feed grain production is high, which means that livestock herds will increase. The corn crop, it is estimated, may be 10% above normal.

### Heavy Drouths Abroad Will Increase Demand

Fourth, heavy drouths abroad, especially in Europe and Australia, will raise world demand considerably for our agricultural produce surpluses. This should keep prices higher, despite jittery Board of Trade fluctuations.

Any way you look at it, the farmer is going to have money in his pocket to spend this fall.

But don't expect him to come into your store and buy. He's too likely to drop in to see his old friends at Sears, Roebuck. The dealer must go out and call on the rural prospect, find out his needs and his desires, and give him just what he wants.

### Fewer Calls; But Hotter Prospects

Old-fashioned specialty selling is indicated for this market. You can't make 10 calls a day; but the two or three you do make should be unusually high producers.

Calling on farmers this fall will get you out of doors just as much—and might turn out to be fully as enjoyable—as going hunting or fishing. The important difference is that you can make money at the former occupation.

## LETTERS

### Just Between Us Engineers & Economists

William E. Clement  
317 Baronne Street  
New Orleans, La.

Publisher:

It's encouraging to read such editorials as your recent "Management Needs to Chart a Course" and others of like tenor. As I see it, our economic problem is thus being brought out in the open and skilfully and intelligently analyzed.

Your thoughts are profound, and I shall be greatly pleased if you will take "time out" to read the attached economic discussion which essays to give the true answer to the problem you are putting up to business men. It will be a pleasure to receive your reaction.

W. E. CLEMENT.

Comment—Mr. Clement's article is entitled "An Answer to David Cushman Coyle—A Proposal for Government-Business 'Rapprochement' to Bring Continuing and Healthy Prosperity." It consists of five mimeographed pages. Perhaps Mr. Clement will send you a copy if requested

direct. We reprint the first and last paragraphs to give an idea of the subject matter:

First paragraph—

President Roosevelt says that he "needs all the help he can get," and Mr. Coyle, (a "number one" administration adviser and economist), declares that the first thing that should be done is to "dispel the paralyzing fear of government persecution that has settled upon the business world." In recent magazine articles the noted economist argues that government spending and investment for "maintenance," etc., is now the only way whereby we can offer "sound investment" for the amount of capital saved by people and corporations—our "surplus capital."

Last paragraph—

To sum up—intelligent taxation is the key to a land policy that will allow producers to use our natural resources and thereby correct the "unbalance" and unemployment so much in evidence in our national economy. "Incentive Taxation," it might be called, with an effect directly opposite to the present penalization and hamstringing system. It would seem to be the part of wisdom and self-preservation for responsible heads of business, industry, labor, and government, to study the matter from every angle and join in this great Tax Relief and educational fight as the next step in a national solution of the problem along "American" and common-sense lines.

Additional Comment—The publisher of the NEWS is appropriately thrilled with pride because he was once a fellow-townsmen of the now-famous David Cushman Coyle, author, economist, consulting engineer, brain trust and New Deal advisor.

It was back in Bronxville, N. Y. before the New Deal or the NEWS were born that Mr. Coyle and the publisher were members of the local civic association which battled mightily for better garbage collection and against the encroachment of apartment building in the residential zone.

Among the books written by Mr. Coyle was one entitled "Blue Stripes," a copy of which was personally presented to the publisher of the NEWS by Mr. Coyle. It told how Efficiency Engineer Coyle had saved the government several thousand dollars by eliminating the blue stripes which were formerly woven into the canvas bags used by the Postal department.

(For the benefit of the younger generation, perhaps it should be explained that "government property" was once considered almost sacred and the blue stripes of a mail bag were a symbol akin to the red stripes of our country's flag.)

It appears that Mr. Coyle has made great progress in the development of his early belief that "Don't Touch" signs should be removed from government property. He now has the satisfaction of seeing the government money bags turned into free-for-all grab bags.

And just think! Only a dozen years ago some folks in Bronxville thought Coyle was a little cracked.

### Just Between Us Small Business Men

National Small Business Men's Association  
National Headquarters  
163 N. Union St.  
Akron, Ohio  
August 8, 1938.

Publisher:

We are endeavoring to build up a library of who is who in various fields. We believe that a copy of REFRIGERATION & AIR CONDITIONING

## They'll Do It Every Time . . . By Jimmy Hatlo



DIRECTORY would be a valuable addition to this library.

Would you be good enough to let us know how this can be brought about?

BARRETT L. CRANDALL,  
Director of Research.

Answer: As one "small business" organization to another, the NEWS will contribute a copy of the 1938 Directory to "a non-partisan non-profit organization to give small business men a voice in national affairs."

### Just Between Us Data Book Publishers

Advertising Publications, Inc.  
100 East Ohio Street, Chicago  
August 8, 1938.

Sirs:

In our 1938 Market Data Book number of Industrial Marketing you supplied us with quite a bit of information for our Electrical section. I am enclosing tear sheets of this section, and I'm wondering if you could take a little time to go over it and return it with your suggestions and the necessary data to bring it up to date. Your cooperation will be greatly appreciated.

A. S. JACOBS,  
Assistant to the Editor.

### Just Between Us Doughnut Dunkers

Kewpie's Coffee Shop  
2014 Chester Avenue  
Bakersfield, Calif.

Jimmy Hatlo:

Your cartoon in the June 29 AIR CONDITIONING & REFRIGERATION NEWS (They'll Do It Every Time) showing a man burning up nickels in a machine and then crying about the charge for extra cups coffee sure made a big hit with me.

A 20-by-12 inch picture of it to hang on the wall would be worth \$5 to me. How's about it?

D. R. BLAIR.

### He Thinks the Beer Would Freeze Solid

The Brunswick-Balke-Collender Co.  
Appliance Division  
623 South Wabash Ave.  
Chicago, Ill.

Aug. 2, 1938

Editor:

In the July 20 issue of AIR CONDITIONING & REFRIGERATION NEWS, we note an article from North Kansas City, Mo., regarding a new "ZeroStream" beverage cooler marketed by Koch Refrigerators.

In the article it is mentioned that one southern tavern keeper serves his drinks at 18° and advertises "the coldest beer in town."

We are wondering if this is a typographical error inasmuch as we are at a loss to understand how beverages, including beer, can be satisfactory when frozen. From all of our experiments, we are unable to find a beer, bottled or bulk, which will not freeze below 27° F. The only other beverage which had a lower freezing point was Vernor's Ginger Ale, which freezes at 22°.

F. M. STEFAN,  
Appliance Division

### Gaines Headed Range Activity In Chicago

Undabar Cooler Corp.  
Electric Beverage Coolers and  
Display Cases  
2800 N. Ninth St.  
St. Louis, Mo.

Aug. 2, 1938

Editor:

July 27 issue REFRIGERATION NEWS page 8 caption, "John Gaines." In the last paragraph quote—"With Frigidaire as general manager of that company's range sales department." Sorry, but this should read—Was in charge of range activity of the Chicago branch.

JOHN G. GAINES,  
Gen. Sales Mgr.

### Found Space Heater Editorial Valuable

Russell Electric Co.  
340 West Huron Street  
Chicago, Ill.

July 27, 1938

Editor:

Your July 20 issue has some statistics on the sale of space heaters that were very interesting.

We have wanted to refer to these statistics at least half a dozen times in the last few days, but some one seems to have gotten away with our copy of the paper.

We wonder if it would be possible to spare another copy or, at any rate, to let us have the data on the growth of the space heater market.

T. C. RUSSELL.

### 'Worthy of Place In Serviceman's Library'

Brunner Manufacturing Co.  
H. S. Dekker  
1827 Tutwiler  
Memphis, Tenn.

Sirs:

Will you please forward C.O.D. to Refrigeration Service & Supply Co., 125 Second Ave., North, Nashville, Tenn., 1 copy domestic refrigeration service manual, 1 copy commercial refrigeration service manual.

It has been my pleasure to recommend your publications in many instances as I feel they are worthy of a place in any serviceman's library. Will you also be kind enough to compile the cost of a complete set of manuals for my personal use with dealers, as very often they are unable to purchase same, due to their remote location, and would thereby order direct after selecting what they desire.

H. S. DEKKER.

### Building a Library

753 W. Howard St.  
Winona, Minn.

Sirs:

Please find enclosed money order for the amount of \$2 for which please send Manual No. 2 on household refrigeration and No. 1 on commercial refrigeration.

These manuals are very helpful in this work and especially to a beginner in the electric refrigeration field and air conditioning. I expect to have a complete set of your books before long.

GLENN A. WOOD.



# Air Conditioning

## Texas Dealer Sells Air Conditioning By 'Bringing It To Life' For Prospects

(Concluded from Page 1, Column 3) equipment needed. He makes notations as to type of construction, condition of walls, ceiling, windows, and floors. He is careful to steer the prospect away from any suggestion as to the cost of the installation.

Third step is to take these rough pencil sketches to the office and draw up clear, understandable plans of the premises in such manner that the prospect can readily read the sketch. With this sketch, the salesman returns to the prospect.

"Selling air conditioning is a lot like selling advertising or any other intangible product," Mr. McPherson explains. "It's a product that you cannot ask a customer to feel or taste or touch as a test of quality and value. Of course, we have catalogs and pictures; but these, too, are rather intangible."

### SKETCH THE PREMISES

"The actual sketch of a prospect's premises, however, brings the subject home to him. There is something that the salesman can show him. He can see what the salesman is talking about. When the company's representative talks of ducts and vents, he can show the prospect on the sketch just what he means—and why all these are essential to the successful operation of the system. The sketch reduces the matter to the layman's language and understanding."

Next, the salesman talks to the prospect about capacities, durability of the equipment, and the cost of operation over a period of years. He shows by the sketch why each feature stressed is taken care of in the system recommended.

### FORGET THE COST

Thus the company gradually sells the prospect on the right sort of equipment, the various elements that enter into the installation and operation of adequate air conditioning for his individual premises, and gradually pushes from his mind what was perhaps the foremost thought in his mind originally: the cost.

Fifth step is to get to the points which the conversations thus far have indicated are the foremost in the prospect's mind—the things which should especially appeal to him because of the peculiar nature of his business.

### SELLING A DRY GOODS STORE

"Perhaps the prospect operates a dry goods store, for example," Mr. McPherson points out. "In that case, we know that he knows the big losses to be incurred through depreciation of fine fabrics, especially silks. We point out to him that air conditioning is essential in the manufacture of many finer fabrics, such as rayons. We tell him just how air conditioning is necessary in weaving rayons, so that they maintain the

proper texture and do not 'break' in the weaving process.

"We point out that if air conditioning is needed to manufacture these fabrics, it is certainly reasonable to presume that they will deteriorate and thus lose their strength and perhaps their luster if exposed to heat and cold and other natural and fast-changing elements. We point out that air conditioning will help him to maintain his fabrics in their normal state and quality, and thus eliminate loss from deterioration."

"Out here in West Texas we are bothered considerably by dust storms. We stress the money to be saved by him through reducing damage by dust. Whatever directly affects the individual prospect, we stress—and thus show him economy, from his standpoint, of adequate air conditioning."

### 'CURIOSITY' VALUE

"Sixth, we point out the 'curiosity' value of air conditioning in our territory. We recently installed a small unit in a local dress shop. The owner declares that it increased her business 50% almost over-night."

"She cashed in, to a considerable extent, on the 'curiosity' value of air conditioning, for there was no other store of its kind in this section that was air conditioned. A lot of women drop into her shop to 'cool off,' or to see how the shop 'feels' under air conditioning, and some of them remain to buy."

"In a town as small as ours, there is a big curiosity value to be had by the average business firm, because air conditioning still is novel enough to attract attention. We stress that point wherever the condition justifies."

### FINALLY—THE PRICE

The final step in the sale is to quote the price. Mr. McPherson points out that his installations cost more than the average, because he refuses to make an installation if he cannot obtain a price sufficient to be able to install the equipment in such a manner as to render the customer maximum service.

Hence, by keeping price out of the conversation until the final step, he will have so sold the prospect on what this specific installation will do for him and his problems that the price by this time becomes secondary. He appreciates by this time that there can easily be a wide variation in prices asked for installations, but that he must pay for whatever he gets. He knows by this time that here, as in his own business, one must pay for quality to get it. The "sting" definitely is gone out of the price.

### JUST WON'T HURRY

"We positively will not make an installation hurriedly," Mr. McPherson points out. "If a prospect informs

us that he must have a system at once, we explain to him that we cannot make the installation, nor even discuss the details with him, until we have made a thorough survey of his premises and studied the individual conditioning problems involved. If he still insists on a hurried job, we pass it up.

"It is our belief that the whole air-conditioning industry is being retarded in its growth by hurried installations, made without proper consideration of the premises and the customer's problems."

## Air Conditioning Planned For 28-Story Dallas Office Building

DALLAS, Tex.—Plans to air condition all 28 floors of the Magnolia building here have begun with equipment installations for the seventh, eighth, and ninth floors, according to D. A. Little, president of the Magnolia Petroleum Co., owner of the building.

While work finished to date is considered experimental, present schedules call for an 850-ton installation to be started on the balance of the building about Sept. 1, to be finished before next April.

Building Superintendent A. C. McNab and Building Engineer A. H. Graham have made a number of trips to other cities to study air-conditioning installations.

Tenants will not be disturbed in the Magnolia building installation, Mr. Little said, as work will be done at night, and all machinery necessary for the job will be housed in a shaft which is now under construction on the northeast side of the building.

The Mercantile National Bank, which occupies the first floor of the building, already has its own system.

## Dealers Claim Results From Los Angeles Show

LOS ANGELES—A substantial amount of "cash over the counter" sales to dealers and retail buyers, as well as scores of live inquiries on equipment, were reported by the 53 exhibitors in the First Los Angeles Air Conditioning, Cooling, and Heating Show, held in the Thermo Air Conditioning Institute building here July 7 to 10.

Some visitors to the show came from as far away as Texas, and many visitors from the nearby states of Arizona, Utah, and New Mexico were registered.

Planned originally as a trade show for contractors and commercial users, the exhibit was expanded to develop general interest. List of displays grew to such proportions that it was necessary to open an annex on adjoining property to house all entries. More than 10,000 sq. ft. of space was used to show products of both national and local manufacturers.

Many exhibitors had equipment in operation at the show, while others showed animated cartoons or diagrams which portrayed the principles by which air is conditioned.

A Chrysler Airtemp radial compressor was expressed from New York City to Los Angeles especially for the show, from which it was sent on to San Francisco for use in the 1939 World's Fair there. Utility Fan Corp. demonstrated how the Gisholt dynamic balancer, first one ever shipped to the Pacific Coast, is used to balance its blower and fan units prior to assembly in air-conditioning equipment.

Too large to place in the exhibit halls were the air-conditioned bus of the Santa Fe Trailways, and the portable airplane air conditioner of American Airlines. These were "spotted" in front of the Thermo building.

The bus, one of Santa Fe's newest ones, was taken off its Los Angeles-Chicago run to be displayed; the American Airlines conditioner was brought to the show from Grand Central air terminal.

In addition to exhibits, industrial motion pictures, showing the installation and application of air-conditioning equipment and materials, educational talks, and open forum discussions by members of the industry were part of the program each day and night in the Institute auditorium.

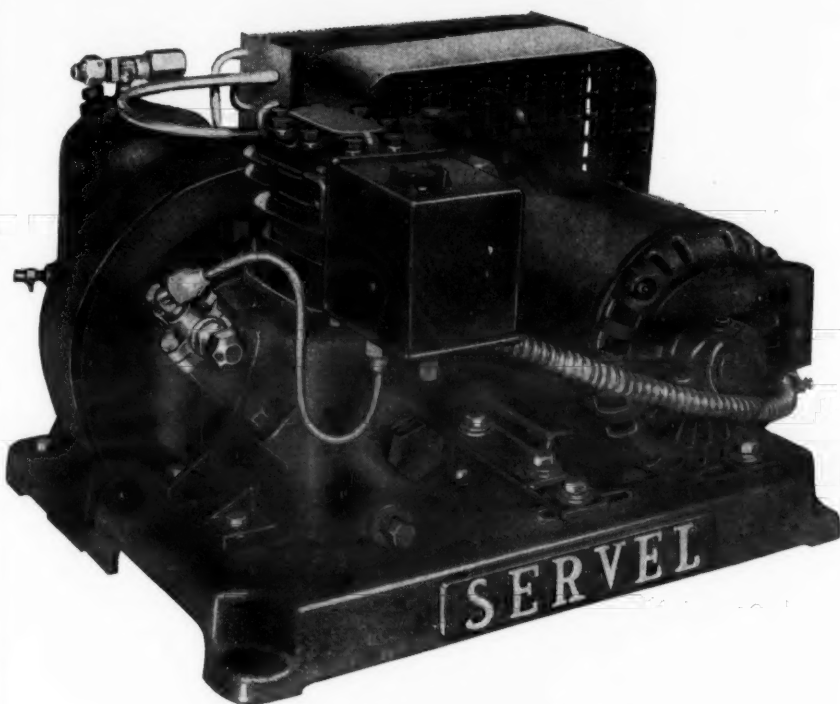
### Sports Store Equipped

LOUISVILLE, Ind.—Lewis Engineering, Inc. designed and the Krause-Weilage Co. installed air conditioning in the sporting goods store of Sutcliffe Co. at 225 S. Fourth St. here.

### Perfex Reports Sales Upturn

MILWAUKEE—Indicative of improvement in lines utilizing automatic controls, Perfex Corp. here reports a sales upturn in June, the first improvement recorded since last October.

## Announcing-



## SERVEL'S Powerful, Compact MODEL U-33

... A FULL-CAPACITY 1/3 H. P. UNIT ATTRACTIVELY PRICED

To meet the demand for powerful but compact refrigerating machines, Servel is pleased to announce its new Model U-33, a 1/3 H. P. unit.

Model U-33 is a twin-cylinder, air-cooled unit, with a generous double-row finned condenser and a large receiver.

Its capacity (2,800 BTU's per hour at 23° evaporator) is probably the highest ever available in a unit of such small cubical size.

Model U-33 is priced substantially lower than any previous models of equivalent capacity.

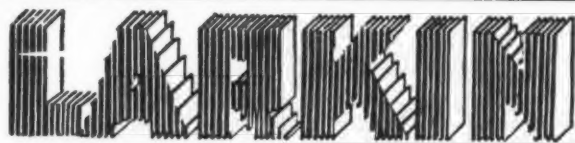
The units in this new Servel series are adapted for low, medium or high temperature applications, embracing practically every commercial refrigeration use.

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AND AIR CONDITIONING DIVISION

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# Air Conditioning

## Engineers Turn To New Basis For Using 'Effective Temperature' Relationship To Get True Comfort Conditions

HOT SPRINGS, Va.—Air conditioning has developed in recent years around combinations of wet and dry-bulb temperatures, known as "effective temperatures." These arbitrary quantities have been used to make up the well-known "comfort chart," which has been valuable to air engineers in the design of air-cooling systems.

Certain new relationships between effective temperatures required for comfort cooling and outdoor weather conditions were discussed by F. E. Giesecke and W. H. Badgett before the summer meeting of the American Society of Heating & Ventilating Engineers, in a paper entitled "Seasonal Variations in Effective Temperature Requirements."

### THE ORIGINAL 'LONES'

Comfort requirements for air conditioning have been the subject of extended research by the ASHVE at its research laboratory since 1923. Early in this work it became apparent that standards of comfort were not absolute, but were affected by climatic conditions. This resulted in the development of a summer and winter comfort zone.

In applying these comfort zones to theaters and other air-conditioned buildings, it soon became apparent that some consideration should be given to outside temperatures.

A variable indoor comfort standard, based on a single definite moisture content, or dewpoint temperature of the air regardless of outdoor conditions, and a definite indoor dry-bulb temperature for any given outdoor dry-bulb temperature, was used between 1933 and 1937. Attempts to apply this standard resulted in considerable difficulty and dissatisfaction, and the study was resubmitted to the research laboratory.

### THE NEW STANDARDS

The standards were revised and are now based upon effective temperatures in the conditioned space in relation to outdoor temperature, rather than on a constant moisture content of the indoor air.

From previously completed studies, it became apparent that there must be some gradual transition from the winter comfort zone to the summer comfort zone, and vice versa, related in some manner to the outdoor temperature, daily, weekly, monthly, or seasonal average.

Studies to determine this seasonal

variation were made in an air-conditioned laboratory of the Texas Engineering Experiment Station at the Agricultural & Mechanical College of Texas, College Station, Tex. The room was 9 feet wide, 8 feet high, and 18 feet long, with all walls, floor, and ceiling finished with aluminum paint. The floor was 1-inch pine laid over cork.

The ceiling, which formed the lower side of a plenum chamber, was of rigid insulation made from exploded wood fiber perforated with  $\frac{5}{16}$  inch holes about  $2\frac{1}{2}$  inches on centers. The conditioned air was introduced into this plenum chamber, and maintained at a slight static pressure which forced it through the ceiling perforations uniformly over the entire room. Air was returned to the conditioner through two slotted grilles in the ceiling extending across each end of the long side of the room.

A spray-type air washer, equipped with both cooling and reheating coils, was used to condition the air introduced into the room. A slow-speed fan moving about 325 c.f.m., was employed to circulate the conditioned air through the perforated ceiling. As a result, a very uniform and imperceptible air movement was obtained throughout the conditioned space, which was well within the meaning of the term "still air." Fresh air was introduced at the rate of about 8 to 10 c.f.m. per person.

### TEST PROCEDURE

The test procedure employed 10 male students, between the ages of 18 and 23; five subjects being tested on two afternoons each week. About 30 sq. ft. of floor space was utilized per subject, thus keeping them far enough apart so inter-radiation of body heat was reduced to a minimum. The subjects were seated at least 12 inches from the nearest wall and 30 inches from the nearest neighbor. The lighting arrangement of the room eliminated the effect of radiant heat from this source.

The usual practice was to bring the subjects to equilibrium in a predetermined constant condition in the test room, which in each case was too warm for comfort, after which the conditions were made to vary slowly across the comfort zone, during a period of from three and one-half to five hours, at a rate never exceeding  $1^\circ$  in eight to 10 minutes, to a condition of too cool for comfort. The subjects recorded their

reactions to the conditions at intervals of five minutes on the following scale of comfort:

### HUMAN REACTIONS

1. Cold.
2. Too cool for comfort.
3. Comfortably cool (subject desired a slightly warmer temperature).
4. Ideally comfortable in regard to a sensation of warmth.
5. Comfortably warm (subject desired a slightly cooler temperature).
6. Too warm for comfort.
7. Hot.

At the same time the degree of sensible perspiration was observed according to the following scale:

0. Forehead or body dry.
1. Forehead or body clammy.
2. Forehead or body damp. (Perspiration just visible.)
3. Forehead or body wet. (Sweat covering surface, frequently in drops.)
4. Perspiration on the head runs down, or perspiration on the body runs down or wets clothing.

All subjects wore the same clothing through the tests, having a total weight of 4.4 lbs., of which the suit weighed 3.3 lbs.

Three separate studies were made of the data secured from these tests. In each case the effective temperature producing optimum comfort for each group for each test was plotted against: 1. the average outdoor dry-bulb temperature for the day of the test; 2. the average outdoor dry-bulb temperature for the day of the test and the preceding two days; 3. the average outdoor dry-bulb temperature for the preceding week, including the day of the test. The effective temperature producing optimum comfort was considered as being the ideally comfortable zone.

### IMPORTANT IN SUMMER

It was noted that above  $65^\circ$  F., a marked relation was indicated between the outdoor dry-bulb temperature and the effective temperature required for optimum comfort, and below  $65^\circ$  F. these optimum conditions seem to remain constant or independent of the outdoor dry-bulb temperature. This change in relationship occurs at the outdoor temperature below which it is generally conceded that heating is required for comfort.

This variation in relationship may be explained as follows: in the winter, places of occupancy are closed to the outdoor weather; the greatest part of the time people are indoors and exposed to more or less uniform temperature; and when they are outdoors, they are dressed according to the prevailing temperature, and, therefore, their response to variations in effective temperature requirements in relation to the outdoor temperature is reduced to a minimum, and, consequently, winter comfort requirements remain more or less constant throughout the season.

### HOW IT VARIES

On the other hand, in summer, as it gets warmer, houses are opened and their temperature is allowed to fluctuate with the outdoor temperature; people dress as lightly as possible, and consequently, whether they are indoors or outdoors, their bodies are exposed to temperatures following closely those of the outside, and therefore, effective temperature requirements vary more closely with the outdoor temperature.

In the area of the charts where the

average outdoor temperature is above  $80^\circ$  F., above which summer air conditioning or cooling is generally desired, the upper and lower limits of the comfort zone extend from about  $69^\circ$  to  $74^\circ$  ET, which agrees with the summer comfort zone as previously established for the condition obtaining at College Station.

The optimum condition of maximum comfort for outdoor temperatures above  $80^\circ$  F. would vary from about  $70.5^\circ$  ET to about  $73^\circ$  ET, a mean of about  $71.7^\circ$  ET, which is only slightly higher than the previously established summer comfort line of  $71^\circ$  ET for the eastern part of the United States.

The line of optimum comfort of  $67^\circ$  ET for the winter comfort zone is only  $1^\circ$  ET above the  $66^\circ$  ET adopted by ASHVE as the winter comfort line.

No correlation was apparent be-

tween the outdoor relative humidity and the optimum comfort requirements established by the test.

During the 82 tests it was found that sensible perspiration disappears at  $76^\circ$  ET, which agrees with the previous work of the society. The finding of the society that the wearing of a coat increased the effective temperature requirements approximately  $2^\circ$  ET, was verified.

It is believed that the studies were conclusive enough to indicate that there is a definite relation between the indoor effective temperature required for comfort and the outdoor temperature which will be applicable to the general public; that it is indicated that comfort requirements remain more or less constant when the outdoor temperature falls below  $65^\circ$  F., and that above  $65^\circ$  F. the effective temperature required for optimum comfort varies with the outdoor dry-bulb temperature.

## Glove-Making Concern No Longer At the Mercy of Weather Since Plant Is Cooled

CANTON, Ohio—Manufacturing of rubber gloves used by linemen to handle high-tension wires was at the mercy of the weather, until air conditioning was installed in the plant of Wilson Rubber Co. here.

Making gloves to meet the exacting standards presented by the men who handle 20,000-volt wires requires a delicate manufacturing process.

Electricians' gloves are made according to the "cement process," which consists of dissolving crude rubber in naphtha to a very thin consistency. The liquid rubber is placed in tanks into which porcelain forms, shaped like a human hand, are dipped.

After each dipping, the naphtha content of the solution must be evaporated, so only a thin deposit of crude rubber remains on the form. The evaporation between dippings requires several hours. About three dozen separate dips are necessary to produce a finished glove of approximately .055-inch thickness.

Workers in the Wilson plant knew all about mixing the rubber and dipping the forms, but after a dip was made any change in humidity or temperature would affect the finished product. According to plant engineers, such changes could easily

ruin a batch of gloves, even after most of the 36 dips had been accomplished.

Technicians of the company determined that a temperature of  $85^\circ$  F., with a relative humidity of 50%, constituted an atmospheric condition favorable to a perfect finished product. They also determined that a minimum of 12 air changes per hour were necessary to carry off naphtha fumes.

To meet requirements for the factory, a Trane air washer was installed that conditioned 23,000 c.f.m. of outside air. A separate exhaust system, with 24 suction lines, each extended within 2 feet of the floor, was constructed. This was necessary to pick up the naphtha fumes, which are heavier than air. The exhaust system handles 21,000 c.f.m.

Cooling is provided by a well on the premises, which supplies 290 g.p.m. of  $52^\circ$  water during summer operation. The system is entirely automatic.

With the air-conditioning system in operation, it is now possible for the company to maintain a definite production schedule. Further savings have been possible through sharp reduction in the number of throw-outs among the gloves manufactured, officials report.

## New Conversion-Type Burner Added By York

YORK, Pa.—A new conversion-type oil burner has been added to the line of automatic heating equipment announced by the York Ice Machinery Corp. early this year, according to an announcement by S. E. Lauer, vice president.

Available in three models, the new burner will handle from 663 to 2,410 feet of standing steam radiation. The entire mechanism is completely enclosed, and the burner is automatic.

## Krumm Installs System For Clothing Store

COLUMBUS, Ohio—L. R. Krumm Co., with offices in the Virginia hotel building, installed a Frigidaire air-conditioning system in Richmond Bros. clothing store here.

## All-Metal Filters Used In Bus Conditioning

CLEVELAND—All-metal, viscous-type filters manufactured by Air-Maze Corp. here are being used in the air-conditioning systems employed by Santa Fe Trailways in its buses traveling west out of Kansas City, Mo., for Oklahoma, Texas, New Mexico, Arizona, and California.

Conditioning system used in the buses was described in a story in the April 6 issue of the NEWS.

Filter screen meshes of the units used in the buses are arranged in graduated sizes, the larger dust particles being arrested by the first screens, and the finer particles by the units of increasingly finer mesh.

As a result, it is said, dust-holding capacity of the filters is fully utilized, and the clogging of single units is practically eliminated. Dust-proofing ability of the filters was tested in trial bus runs in the "dust bowl" of eastern Colorado and western Kansas.

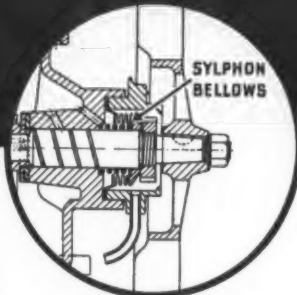
## Parry Appointed To Fuels Committee

NEW YORK CITY—Appointment of V. F. Parry of the experiment station of United States Bureau of Mines, Denver, to American Society of Heating & Ventilating Engineers' committee on solid fuels has been announced by W. A. Danielson, chairman of the committee.

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# Service Methods

## How Heat Exchangers Will Improve Operation of a Cooling System

By K. M. Newcum, Sales Manager, Superior Valve & Fittings Co.

HEAT exchangers or heat interchangers are, as the terms imply, apparatus for utilizing the cooling or heating effect of one fluid upon another fluid for increasing or decreasing the temperature of one or both of the fluids, the results of which effect certain economies or advantages of operation.

Principal uses of heat exchangers in refrigeration or air-conditioning systems are (1) cooling the liquid refrigerant en route to the evaporator and heating the return suction vapor, and (2) condensing high pres-

sure refrigerant vapor in a double-tube water-cooled condenser. With a heat exchanger, the thermostatic expansion valve is adjusted to maintain a frost line up to the thermo bulb—but not beyond. When the valve cycles (closes when the bulb becomes chilled) the frost line backs up into the evaporator, often cutting out of active service as much as 20% of the evaporator surface.

With a heat exchanger installed as shown in Fig. 1 the valve may be adjusted (opened wider to maintain lower superheat) to extend the frost line far beyond the thermo bulb. Liquid and saturated vapor which

Higher suction pressures result in increased compressor displacement capacity.

The effect the heat exchanger has upon the incoming liquid is that the cold suction vapors in the inside tube chill the warmer liquid which surrounds the suction tube. Cooling the liquid in the exchanger removes this cooling load from the evaporator; also reduces or eliminates the "flash gas" which usually accompanies the liquid to the evaporator. Cooling the liquid in the exchanger, then, effects two noticeable capacity increases.

Cooling the liquid refrigerant results in heating the suction vapor. Heating the suction vapor serves to vaporize or superheat all the refrigerant which may have entered the heat exchanger as a liquid or saturated vapor.

Vaporizing or superheating all the suction vapor before it enters the compressor helps to prevent "oil slugging" which is often caused by liquid refrigerant or saturated vapor (cold gas) entering the crankcase.

Liquid refrigerant or saturated vapor entering the crankcase mixes with the oil and causes it to boil or foam violently. With the compressor in operation, slugs of the violently foaming oil are forced through the compressor valves. Result in many cases is repeated valve breakage.

Oil slugging also makes uncertain the crankcase oil level, and is often the direct cause of seal leaks due to shortage of oil in the crankcase.

Heat exchangers are a worthwhile addition to any commercial refrigeration or air-conditioning installation. They may be made up with heat exchanger tees, as shown in Fig. 1, or purchased as a complete unit.

## New G-E Voltmeters Cut Temperature Errors

SCHENECTADY, N. Y.—Reducing temperature errors over a wide range of conditions, General Electric has developed two specially compensated type AP-9 voltmeters as additions to the standard line. Using the same terminal arrangement as the standard instruments, the new units differ in ohms-per-volt sensitivity, temperature coefficient, and accuracy.

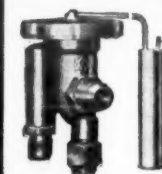
Listed in ratings of 150 and 150/300 volts, the units are expected to find their major applications in voltage-survey work.

The standard 150-volt type AP-9 voltmeter has a normal temperature coefficient of 0.03% per °C., which means that the instrument will read about 2.2 volts high when used at 0° F. The specially compensated instrument of the same rating has a temperature coefficient of not more than 0.01% per °C., which means that the error at 0° F. will not be more than 0.7 volt.

The standard 150/300-volt unit has a normal temperature coefficient of 0.03 when used on the 150-volt tap and of 0.01 when used on the 300-volt tap. In the new instrument, however, the variation in these values is reduced—the coefficient is 0.01 with the 150-volt arrangement and 0.015 on the 300 volt.

As a result of this "leveling-off" of temperature variations, both the new 150-volt instrument and the new 150/300-volt unit, when used on the 150-volt tap, are accurate to within 1/2 of 1% throughout the 75 to 150-volt portions of their scales.

## Refrigerating Engineers Appreciate the Accuracy of ALCO "TK" Thermo Valves



THE success and acceptance of the new Alco low cost, small capacity "TK" Thermo Valve is due to the famous Alco record of accurate control. The "TK" like other Alco Thermo Valves, restricts the line of complete evaporator efficiency at all times. Since their inception, no "TK" valve has ever lost its charge—additional proof of the dependable, trouble-free service characteristic of every Alco refrigerant control. Yet the "TK" is offered at a saving of 20 to 40% in cost over previous Alco small capacity valves. It will pay you to get full details and specifications of Alco's line of "TK" Thermo Valves. See your jobber today.

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## Detail of Heat Exchanger Installation

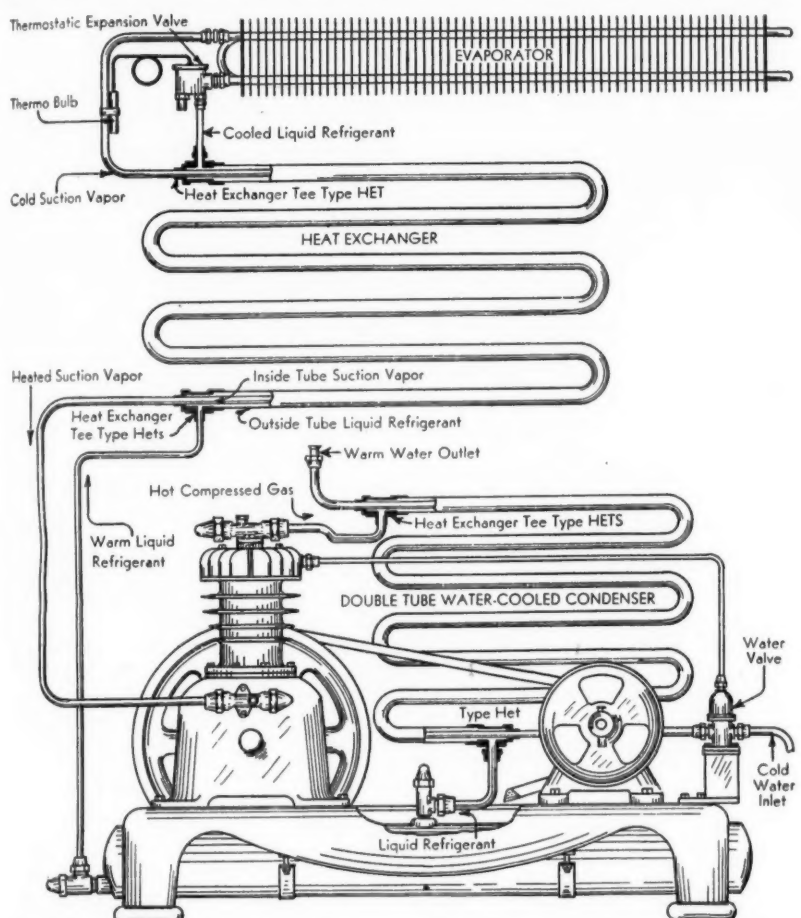


Fig. 1. Illustrating a typical refrigeration system with a tube-within-a-tube heat exchanger and a double-tube water-cooled condenser, both of which may be made, on the job or in the shop, with heat exchanger tees.

sure refrigerant vapor in a double-tube water-cooled condenser.

### OTHER USES

Other uses are (1) as efficient direct-expansion evaporators for liquid cooling and (2) for utilizing the cooling effect of drain water from water coolers for cooling the higher temperature incoming water.

When installed near the outlet of the evaporator, as shown in Fig. 1, a heat exchanger of ample capacity will allow for an appreciable increase in evaporator and condensing unit capacity. The heat exchanger proper does not produce the increase in capacity, as is sometimes mistakenly believed. It is merely an instrument by means of which certain wasted properties are harnessed and put to work—resulting in greater overall system capacity.

### HOW IT WORKS

How heat exchangers utilize these valuable properties may be explained as follows: in a system not equipped

continues beyond the bulb will be vaporized in the heat exchanger by the warmer liquid which is en route to the expansion valve.

### SURFACES UTILIZED

By frosting beyond the thermo bulb and into the heat exchanger, every square inch of evaporator surface is constantly supplied with active refrigerant and consequently performs its expected heat removal duty.

Utilizing all of the evaporator surface and operating at a lower superheat increases the evaporator capacity, hence allows it to operate at a higher temperature. Higher evaporator temperatures mean higher suction temperatures and pressures.

For Information on Motors  
FOR ALL TYPES OF  
Air Conditioning and  
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Wagner Electric Corporation  
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## AIR CONDITIONING • REFRIGERATION • FITTINGS



We manufacture an exceptionally complete line of Valves, Fittings and Accessories for Mechanical Refrigeration and Air Conditioning.

Send for our new Catalog and Price List 2004—The most comprehensive catalog ever issued to the trade.

MUELLER BRASS CO.  
PORT HURON, MICHIGAN

## El Paso Service Company Opens Sales Division

EL PASO, Tex.—Electric Appliance Service Co., repair firm operated here by C. B. Warren and Paul James, has opened a sales division known as Refrigeration Engineering & Sales Co. under the direction of O. N. Wherit in the new and larger quarters at 821 N. Mesa Ave. to which the company has moved.

The firm's new sales division has been appointed dealer for one of the "desert coolers" now being used to a considerable extent in this area for comfort cooling of homes, stores, and offices. The company also sells McCray refrigerators, Bastian Blessing fountains and freezers, Frigidaire water coolers, compressors, and other commercial items.

Electric Appliance Service Co. has been handling service of household and commercial refrigeration and air conditioning here for more than 10 years, and now employs seven trained service men.

The firm is the authorized service company for Frigidaire and Norge, and also services Kelvinator equipment, McCray refrigerators, Bastian Blessing fountains and freezers, and all kinds of bar equipment, water coolers, and air conditioners.

First floor of the new building, on two sides of which are large display windows, is devoted to the company's sales and display room and offices. On the second floor is a large, airy shop and a well-stocked parts department.

The company regularly invites the public to inspect its establishment and see how the service work is carried on. Mr. James and Mr. Warren report that this policy has helped considerably in building goodwill.

## 336 Cooling Units Listed In New Rempe Bulletin

CHICAGO—Three hundred and thirty-six cooling units manufactured by Rempe Co. for low temperature and comfort cooling applications are listed and described in a new 40-page bulletin (No. 105) issued by the company.

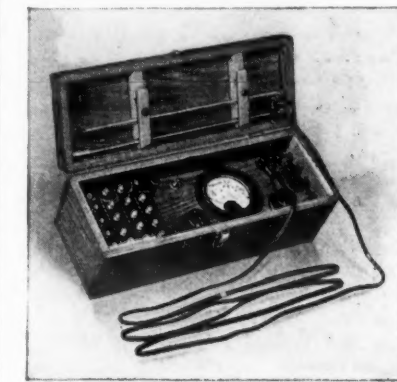
This bulletin contains engineering data, practical information on the selection of the proper unit, sample problems and solutions, air velocity tables, B.T.U. requirements for content cooling or product load, heat leakage, and performance ratings.

Refrigeration and air-conditioning engineers interested in obtaining a copy of the bulletin may do so by applying to the company at 340 N. Sacramento Blvd. here.

## New Anemometer Shows Speed By Temperature

READING, Pa.—Air velocities from zero to 6,000 f.p.m. may be measured with the "Thermo-Anemometer" recently introduced by Willson Products, Inc. here. Air movement in ducts, exhaust hoods, and air-conditioned buildings may be tabulated with the device, and the direction of airflow need not be known, it is claimed.

Operation of the Willson Thermo-Anemometer, while not direct reading, is said to be very simple. To determine the velocity of air movement at a given point, the bulb of the heater thermometer is held at



the point in question, and the temperature read as soon as it attains equilibrium.

The thermometer bulb is heated for this purpose by passing electrical current through resistance wire on the bulb from batteries contained in the instrument case.

Accuracy of the result is said to increase with an increase in the temperature difference between the heated thermometer and the regular thermometer.

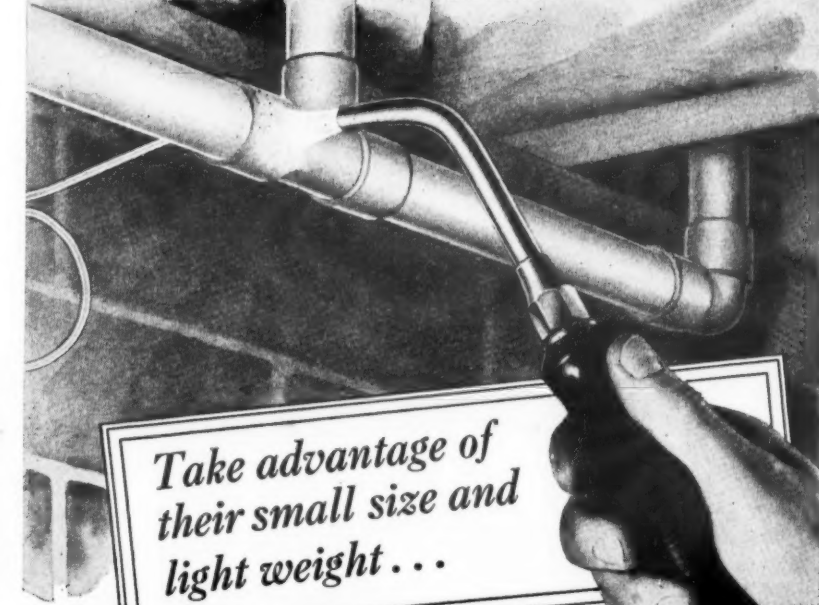
Knowing the temperature difference and voltage used, the air velocity may be read direct from the chart accompanying every instrument, it is said.

## Niagara Bulletin Describes Sheet Metal Presses

BUFFALO—Latest specifications, including die space dimensions, of Niagara No. 101 bench presses are given in Bulletin No. 59-D, just issued by Niagara Machine & Tool Works, manufacturer of machines and tools for sheet metal work.

With capacity up to two tons and operating at 215 strokes per minute, these presses have a wide range of applications for stamping small parts.

## PREST-O-LITE TORCHES



Take advantage of their small size and light weight...

Prest-O-Lite A-6107 Torch (Illustrated), price . . . \$2.50

Prest-O-Lite\* Torches make work on overhead jobs easier, faster and more economical. These modern torches can be handled as easily as your strip of solder, and they operate efficiently in whatever position they are held.

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Unit of Union Carbide and Carbon Corporation

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In Canada: Dominion Oxygen Company, Limited, Toronto

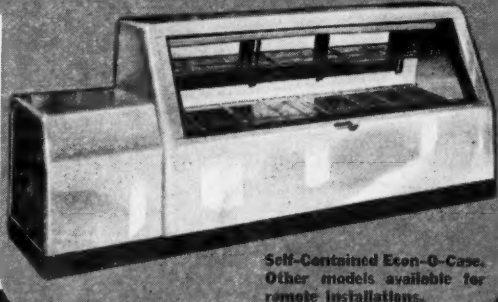
PREST-O-LITE GAS  
Prest-O-Lite Gas is readily obtainable through thousands of Prest-O-Lite Exchange Service Stations.



## THE BUYER'S GUIDE

# 3500 KOCH DEALERS AND SALES REPRESENTATIVES ARE NOW SHOWING THE NEW ECON-O-CASE

Over 3500 distributors, dealers, sales agents, and salesmen in all parts of the country, and in foreign lands, are promoting the sales of Koch Econ-O-Cases. The line is profitable because it is genuinely GOOD, through and through. . . . Write today for information and full particulars.

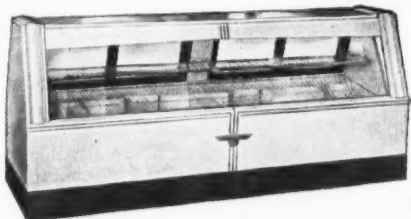


Self-Contained Econ-O-Case. Other models available for remote installations.

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Display Cases & Refrigerators  
Fulfill Constantly Increasing  
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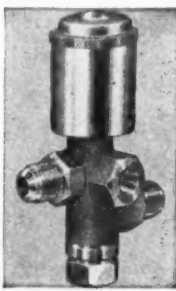
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DES MOINES . . . . . IOWA  
52 YEARS OF SERVICE 1886-1938

## AMINCO No. 881 Constant Pressure Valve



→ With Built-in Check ←  
Two Temperature—Automatic  
Ideal for Multiple Systems—Shuts off tight.

These valves are used to control the warmer coils in multiple systems. They are adjustable between 20 in. vacuum and 40 lb. pressure. In operation they will maintain coil pressures within a 2-lb. differential at any setting within the range.

They are best used when temperature differences are not too wide and where a constant pressure is required in the coil controlled.

They are frequently installed on walk-in boxes which are operated by the same compressor as the counters in meat markets. In this application the temperature of the counter controls the compressor and the two temperature valve keeps the walk-in box at a constant temperature avoiding low pull-down due to the fact that this box is not opened as often and does not have the heat loss of the counter.

Made in Two-Way (881) & Three-Way (679)

**AMERICAN INJECTOR COMPANY**  
1481-1491 Fourteenth Avenue DETROIT, MICHIGAN  
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## Suggestions For an Accounting System To Be Used By an Air-Conditioning and Commercial Refrigeration Dealer

This article is not offered as an attempt to tell the dealer how to manage his business, but only to provide some information and suggestions with respect to an accounting system which may prove helpful.

Principally, the article attempts to bring to light all the items which should be considered if the accounting system is to give a true picture of the air-conditioning and commercial refrigeration dealer's business.

Reference is made to the two articles which appeared in the April 27 and May 4 issues. Readers should have these issues at hand to get the full value from this article.

**D**EALERS in commercial refrigeration and air conditioning require a more complete record keeping system than the one described for a household refrigeration dealer in the April 27 and May 4 issues of AIR CONDITIONING & REFRIGERATION NEWS.

Basic reason for the difference is that where the household refrigeration dealer's costs are well established by factory price lists, the commercial and air-conditioning dealer has the added element of installation, engineering, and more extensive service costs.

It is absolutely essential that the commercial refrigeration dealer know these costs, and have them set up in a manner which will give him a day-to-day picture of his business and permit a monthly analysis of the profit position of his organization.

The commercial dealer should make up a "schedule of accounts" showing the assets and liabilities of the business. This schedule is described in the April 27 issue of AIR CONDITIONING & REFRIGERATION NEWS, showing cash on hand, accounts receivable, merchandise inventory, truck, furniture and fixtures, and prepaid insurance under "assets"; and accounts payable, notes on truck, open accounts, and indirect liability to a finance company under "liabilities."

### FINDING 'NET WORTH'

By subtracting the liabilities as established from the assets, the dealer will obtain a figure which represents the "net worth" of the business.

In the same issue of AIR CONDITIONING & REFRIGERATION NEWS is a description of the "Inventory Card Record," which should also be used by the commercial and air-conditioning dealer. This card is kept in an "inventory file," usually on a 3x5 or 5x7 card, and is transferred to a "sold" or job file when the merchandise goes out of inventory and is shipped to the place of installation.

The "inventory card" shows the serial number of the equipment, model, make, cost, date received, invoice number, date sold, salesman, selling price, owner's name, owner's address, and date the warranty on the equipment expires. By moving this card from the "inventory" to the "sold" file the dealer saves a great deal of duplication of records which would occur if all the data given had to be copied on another card, or in another book.

### JOB COST RECORD

After the "asset and liability" statement is prepared, and an inventory file set up, the dealer should then make a "job cost record" for each installation. These records will show all costs which accrue against

a given installation, including materials, labor, service, permits, and freight.

Table 1 illustrates a typical job cost record on a 10-ton air-conditioning system installed in a long narrow restaurant seating approximately 75 people. Because of the length of the room it is necessary to use two suspended air-conditioning units, containing coils, fan, motor, filters, and belt drive. If the system were handled with one 10-ton conditioner the costs shown would be considerably less, due to reduction in cost of units, amount of refrigerant piping, water piping, control wiring and rigging.

The cost record in Table 1 includes a 10-ton compressor complete with motor, condenser, and automatic water-valve. Two suspended conditioners are set up without coils, unless the dealer buys the conditioners complete. Expansion valves are included in the cost of the coils.

### PIPING COSTS

Freon piping is figured on the basis of material and labor. Some estimators prefer to lump these amounts and figure all piping erected. Another method is to separate the costs of copper and labor per lineal foot. By this method Freon piping would be 200 ft. (liquid and suction) and would be based on \$1 for material and \$.30 for labor. At a total cost of \$1.30 per running foot, times 200 ft., the total would be \$260 as compared with the total of \$250 established in the estimate. If the lineal foot method of figuring refrigerant piping is used, the cost for material will vary from \$.70 per foot for 1 to 3-ton systems to \$2.50 per foot for systems of 15 tons and over. Labor for erection will be approximately \$.30 per foot on small jobs and \$.50 on large systems.

As suction lines must always be covered with a suitable insulation we have included \$.35 for this purpose in the estimate.

### ELECTRICAL, PLUMBING, RIGGING

Electrical work is usually sub-contract, but as it must have the supervision of the air-conditioning dealer, it is included in the schedule of costs. In this instance the \$100 includes wiring one compressor, two conditioners, and all controls. Electrical costs will vary widely with the size of the community and prevailing union conditions.

As the compressor is located in the basement and the two conditioners are suspended in the restaurant space, it is necessary to go through the floor with refrigerant piping, drains, and wiring in two places, \$25 is set up in the estimate for this purpose.

Plumbing may be sub-contract work, or may be done by the dealer's

### Table 1—Job Cost Record

Job No. 1. 10-ton air-conditioning system.	
10-hp. compressor	\$1,100.00
2 5-ton suspended conditioners	400.00
2 5-ton coils	220.00
Freon piping (100-ft. copper)	
Material	125.00
Labor	125.00
Covering	35.00
Electrical work (labor & materials)	100.00
Cutting floor for refrigerant pipe	25.00
Plumbing (water & drains)	150.00
Rigging (compressor)	35.00
Rigging (suspended conditioners)	100.00
Fresh air connection and intake louver	80.00
Testing & starting	25.00
45-lb. drum Freon	27.00
2 thermostats	15.00
2 relays	16.00
2 solenoid valves	24.00
<b>Total cost of labor &amp; material</b>	<b>\$2,602.00</b>
Selling price of unit (total cost divided by .7 which gives a markup of 30% off selling price) \$3,717.00	
Service on compressor (double cost of Freon)	\$ 54.00
Service on conditioners (\$20 each)	40.00
Electrical & refrigeration permits	7.00
Freight	35.00
<b>Contract price</b>	<b>\$3,853.00</b>
Gross profit (selling price minus cost of material & labor) \$1,115.00	

### Table 2—Job Cost Record

Job. No. 2—¾-hp. commercial refrigeration system.	
¾-hp. water-cooled refrigeration machine	\$ 150.00
4 expansion valves at \$9	36.00
Guard	4.00
Coil for reach-in box (7 x 6½ x 2½)	30.00
Coil for water cooler	13.00
Coil for bottle cooler	13.00
Coil for 6-ft. salad pan	10.00
Coil hangers and supports	10.00
25-ft. liquid and suction line	36.00
Refrigerant	2.50
Plumbing (water connection)	5.00
Foundation	3.00
Labor (40 hours) at \$1 per hour	40.00
<b>Total cost of material &amp; labor</b>	<b>\$ 382.50</b>
Selling price (total cost divided by .6 which gives a markup of 40% off selling price) \$ 637.50	
Permit	4.00
Freight & cartage	5.00
Service (\$10 per machine and \$5 for each valve)	30.00
Wiring	20.00
Used box (reach-in) \$95 plus 10%	104.50
Finance charge	70.00
<b>Contract price</b>	<b>\$ 870.00</b>
<b>Gross profit</b>	<b>\$ 255.00</b>

own men, depending on prevailing codes and regulations. A cost of \$150 has been established for water and drain lines from each of the two conditioners.

Too often the cost of rigging is ignored, or underestimated. In this instance it is necessary to move a

(Concluded on Page 13, Column 1)



### Dayton V-BELTS


Silent, vibrationless, dependable, long-lasting. Powerful grip prevents slippage. A nearby distributor carries a complete stock for appliances and machines.

**THE DAYTON RUBBER MFG. CO., DAYTON, OHIO**  
World's Largest Manufacturer of V-Belts

## LINDERME

**SEALED AND DEHYDRATED**

**SEAMLESS Copper TUBING**



**LINDERMEYER TUBE COMPANY**  
CLEVELAND OHIO, U.S.A.

### Table 3—Job Cost Record

	Cost	Selling Price	Gross Profit
Job No. 3 Beverage cooler	\$180.00	\$250.00	\$ 90.00
Job No. 4 Beverage cooler	280.00	400.00	120.00
Job No. 5 Water cooler	140.00	200.00	60.00

### Table 4—Uniform Sales Record (One Month)

(One Month)						
Job No.	Date	Owner	Salesman	Cost	Selling Price	Gross Profit
1	12/10/37	Capitol Cafe	Owner	\$2,742	\$3,853	\$1,115
2	12/14/37	Star Food Shop	Smith	615	870	255
3	12/15/37	United Lunch	Smith	160	250	90
4	12/20/37	Purity Market	Smith	250	400	120
5	12/22/37	White Steel Co.	Owner	140	200	60
				<b>\$3,937</b>	<b>\$5,573</b>	<b>\$1,640</b>



## Analysis of Costs of Commercial Dealer Shows Need For Considerable Capital

(Concluded from Page 12, Column 5)

10-hp. compressor into the basement of the building, and to suspend two conditioner units. Cost of placing the compressor is estimated at \$35. This cost will vary from \$9 for placing a small compressor to \$50 for a 25-ton unit.

Hanging the two conditioners will require a crew of six to eight men, several ladders, and perhaps the services of a carpenter. Labor has been estimated at \$100.

One of the suspended conditioners will be connected to an outside grille to supply fresh air to the room. This necessitates a sheet metal connection to the outside, and intake louvers to prevent rain from entering the grille. Cost is shown at \$80.

Testing and starting the system will take time. \$25 has been included in the cost for this purpose. Charging the system will require a 45-lb. drum of Freon at \$27. Controls used on the system include two thermostats at \$7.50 each, two relays at \$8 each, and two solenoid valves at \$12 each.

Total cost of materials and labor is \$2,602. To obtain the selling price of the equipment at a figure representing 30% overhead and profit, we divide the cost figure by .7 (30% on) and the result is \$3,717.

Service costs on air-conditioning systems are figured in many ways, but one of the safest methods used by estimators is to double the cost of the Freon used in the system, and add \$20 for each fan unit. In this instance the total service cost is \$94. To this is added \$7 for permits and \$35 freight on equipment.

Contract price of the installation is \$3,853 plus necessary state sales taxes. Gross profit amounts to \$1,115.

Table 2 shows the "job cost record" on a 3/4-hp. commercial refrigeration system, which is used to cool one reach-in refrigerator, one water tap, one small bottle cooler, and a 6-ft. salad pan.

**PAR CONDENSING UNITS**  
28 MODELS  
1-4 TO 20 H. P.  
WRITE FOR FREE CATALOG  
MODERN EQUIPMENT CORP.  
DEFIANCE, OHIO, U. S. A.

You Can Install  
**SPORLAN**  
THERMOSTATIC  
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with Confidence!

**PENN Leads in**  
AUTOMATIC SWITCHES  
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**BUNDY TUBING**  
Copper-Braced Steel. Cop-  
per Coated Inside and  
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BUNDY TUBING CO., DETROIT

**Anaconda Copper**  
Refrigeration Tubes  
Unusually soft!  
  
THE AMERICAN BRASS CO.  
FRENCH SMALL TUBE BRANCH  
General Offices: Waterbury, Conn.

**Table 5—Expenditures & Profit Statements**

Salaries	
Owner .....	\$ 300.00
Engineer .....	250.00
Salesman .....	200.00
Stenographer-bookkeeper .....	100.00
	<b>\$ 850.00</b>
Operating	
Stationery .....	25.00
Postage .....	10.00
Rent .....	75.00
Telephone .....	45.00
Light .....	10.00
Janitor .....	25.00
	<b>\$ 190.00</b>
Miscellaneous labor	
	<b>\$ 100.00</b>
Prepaid Expenses	
Fire insurance .....	1.00
Auto insurance .....	3.00
Advertising .....	30.00
Direct mail .....	36.00
	<b>\$ 70.00</b>
Taxes	
Social Security .....	8.50
Old Age Benefit .....	25.50
	<b>\$ 34.00</b>
<b>Grand total</b> .....	<b>\$1,244.00</b>
Gross profit of \$1,640 (Table 4) minus \$1,244 equals \$396.00 net.	
Paper sold to finance company	
70% of gross sales of \$5,573 equals \$3,901.10	
20% down payment leaves 80% financed or .....	3,120.00
10% holdback by finance company on paper handled .....	312.00
Net profit of \$396 minus holdback of \$312 equals \$84 cash.	
(Dealer will be paid 10% holdback when contracts are paid out.)	

Price of the compressor, expansion valves, and guard, are set up in the estimate. The next items are coils for the various applications together with coil hangers and supports.

Refrigerant lines are estimated at \$36. Extra refrigerant is \$2.50. Installation work includes plumbing, \$5, foundation, \$3, and labor, amounting to 40 hours at \$1 per hour.

The total of material and labor on this installation is \$382.50. This amount divided by a factor of .6 (40% on) amounts to \$637.50. Added to this base cost are permits, \$4; freight and cartage, \$5; service, \$30; wiring, \$20; used reach-in box, (\$95 plus 10%) at \$104.50; and a finance charge of \$70.

### ESTABLISHING A PRICE

There are many ways of breaking down commercial estimates, but the one given in Table 2 is among the most common methods of establishing a price. Total of all the items in Table 2 gives a contract price of \$870 showing a gross profit of \$255.

Table 3 includes jobs No. 3, 4, and 5, showing the costs and selling price of two beverage coolers and one water cooler. The "cost" given in the estimate includes freight, delivery, and service for one year.

Most commercial and air-conditioning dealers keep a "uniform sales record" of the type illustrated in Table 4. This shows the job number, date, owner's name, address, name of salesman, cost, selling price, and gross profit on the sale. Other items, such as invoice number and service record card number, may well be included in this record.

### \$1,640 GROSS PROFIT

Totals tabulated on this record show costs for the month of \$3,937, a selling price of \$5,573, resulting in a gross profit of \$1,640.

Table No. 5 is a record of expenses, overhead, and profit for the month.

Owner's salary is assumed at \$300, engineer at \$250 and salesman (including expenses and commission) at \$200.

Various methods of employing commercial refrigeration salesmen have been used in recent years, but in making up a budget, the business man must assume a certain sales expense. This figure of \$200 could conceivably be based on a salary of \$75, car expense, and 4% commission, or a salary of \$100, no car expense and 5% commission, or a straight 10% commission. In any case the salesman must be compensated for his efforts.

Operating expenses include stationery and supplies, postage, phone (which is usually high if the dealer works any territory by long distance), rent, light, and janitor service. If the dealer has a truck, its

cost of operation and monthly depreciation must be shown under "operating expenses."

Miscellaneous labor (which cannot be charged to any given job) is estimated at \$100. This cost will creep into any business of this type and must be reckoned with.

Prepaid expenses include fire insurance, auto insurance on owner's car, advertising, and mail promotion. The latter is an important part of any commercial refrigeration business, particularly if the dealer takes advantage of the many excellent mailing pieces of manufacturers.

Social Security is 1% of total salaries—\$8.50, and Old Age Benefit tax is 3% of total salaries in many states.

Total cost for doing business for the month amounts to \$1,244. This figure subtracted from the gross profit shown in Table 4 leaves \$396 net.

Assuming that 70% of the dealer's business is installment paper, this

amounts to 70% of the gross sales of \$5,573, or \$3,901.10. As a 20% down payment is obtained on these contracts, the actual amount to be financed is 80% of the \$3,901.10 or \$3,120.

If the finance company holds back a reserve of 10% of this amount, which is customary in many cases, the dealer does not get his \$312 until the contract is paid out, perhaps 18 months or two years later. Hence the net cash advance for the month amounts to the \$396 net profit less the \$312 finance company "holdback" or \$84.

Commercial refrigeration and air-conditioning dealers must remember that this holdback will accumulate to a sizeable amount as the dealer keeps on doing business. At an average of \$300 per month, at the end of 18 months the holdback has amounted to \$5,400, which may represent a considerable part of the capital structure of the business.

Certain commercial refrigeration

and air-conditioning systems can be financed by the major finance companies and banks under Federal Housing Act terms, and in this case there is no holdback of 10% as the loan is guaranteed by the government. This method of financing will bear investigation in any job which relates to the improvement of property.

It is evident from the above analysis that the commercial refrigeration and air-conditioning dealer must have a reasonable amount of capital to operate his business, must keep careful records on all job costs, must know what his overhead is from month to month (or from week to week) and how much of his money is tied up in the financing of business.

Failure in this type of business is most often attributed to the refusal of the dealer to recognize what his costs are, and keep an accurate record of them, both for himself, and the government.

## ELECTRICITY SAVED

### BY PEERLESS MODEL V THERMAL EXPANSION VALVE

Did you know that the kind of thermal expansion valve you use makes a big difference in the operating costs of any refrigeration system?

In recent tests made by an impartial laboratory, the Peerless Model V Valve not only gave 100% performance satisfaction, but also

CUT OPERATING COSTS as compared with another well known make, by substantially reducing the electric current consumption of the compressor motor.

Your customers will thank you for selling them this Peerless "Velvet Action" Valve.

You Can Buy This New Valve From Your Local Peerless Jobber

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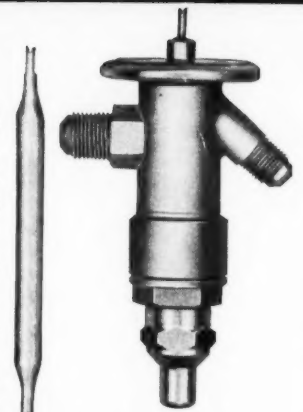
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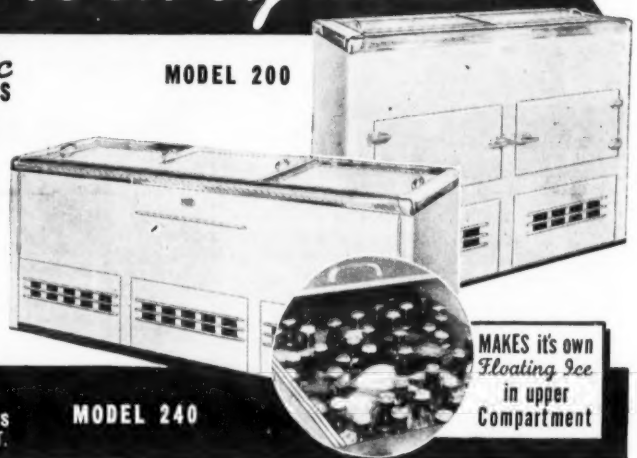
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BEVERAGE & BEVERAGE-FOOD COOLERS

The world's largest builder of "floating ice" beverage and beverage-food coolers! And, no wonder! PELCO chills from room temperature to desired degree in about 30 minutes—makes its own floating ice automatically as needed. It's an EXTRA value cooler—lower refrigerator compartment makes PELCO doubly useful... extra quality... extra performance... extra beauty... extra years of service. Super-powered. CASH IN on PELCO—GET ALL THE FACTS.  
Address Desk A-88



MODEL 200

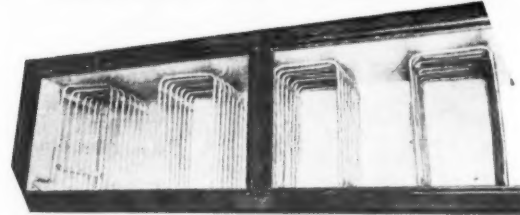
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MODEL 240

## THE IDEAL SPEED COOLER

Tremendous  
Capacity  
Unbelievable  
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Can be used  
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### RULE THE BEVERAGE COOLER MARKET IN YOUR TERRITORY

The beverage cooler your customers will invariably prefer.

It is a proven fact that in any territory where the Ideal Speed Cooler is in operation, all competition is eliminated.

**WHY?** Enormous capacity, unbelievable fast cooling, satisfying the most exacting demands.

Compartment coil feature eliminates "hunting" or "wading" for the right brand.

Sturdy in construction, beautiful in appearance. Two models, six sizes.

**CASH IN** on the beverage cooler sensation of the year. Some territories still available.

**IDEAL BEER COOLER CO.** 1500 No. Broadway, St. Louis, Mo.  
Manufacturers of all kinds of Liquid Coolers

TOSS OUT THE OLD  
—SLIP IN THE NEW!

**Ranco**  
HOUSEHOLD  
REFRIGERATOR  
CONTROLS  
32 EXACT REPLACEMENTS

SAVE TIME and make more money  
—by replacing worn-out refrigerator  
controls with perfect-fitting Ranco  
Exact Replacements. Thirty-two  
models. Ask your Ranco jobber.

Ranco Inc., Columbus, Ohio, U.S.A.



## Air Washer Equipment Extracts Bromine From Sea For Ethyl Gasoline

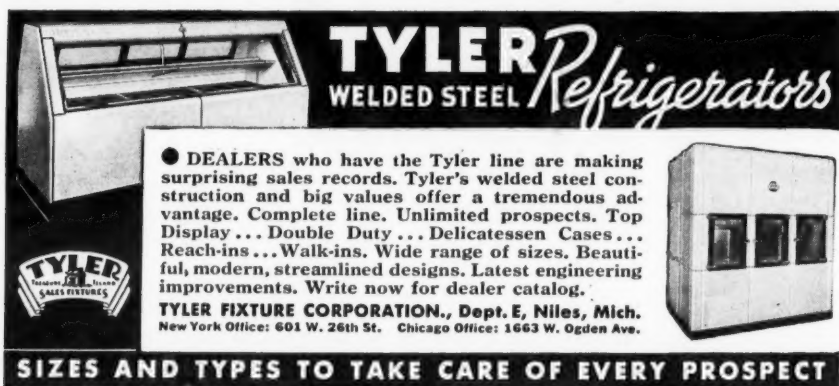
WILMINGTON, N. C.—Application of equipment usually associated with the air-conditioning business to industrial processing on a gigantic scale is illustrated in the extraction of bromine from sea water in a plant owned jointly by the Dow Chemical Co. and the Ethyl Gas Corp. here.

A virtual river of sea water enters the plant, measuring approximately 20 feet wide and 6 feet deep. The water is first subjected to chlorination, to free the bromine, and is then run through an aerator built in the form of a tower filled with glass wool fibers. This process serves to blow the bromine out of the water and carry it in the air stream. The "dirty" air, which is loaded with

bromine, is then scrubbed with caustic soda in an air washer, which removes the bromine from the air in a concentrated solution.

This solution is then treated with acid which precipitates pure bromine. The resultant chemical is then mixed with ethylene gas and shipped as ethylene bromide, which is added to ordinary gasolines to make "ethyl" gasoline.

According to F. R. Bichowsky, research engineer for the Dow Chemical Co., the process is continuous, and is manned with a minimum of men. The operation is almost entirely mechanical and automatic, and embraces industrial arts well known to air-conditioning men, he states.



**TYLER** WELDED STEEL Refrigerators

● DEALERS who have the Tyler line are making surprising sales records. Tyler's welded steel construction and big values offer a tremendous advantage. Complete line. Unlimited prospects. Top Display... Double Duty... Delicatessen Cases... Reach-ins... Walk-ins. Wide range of sizes. Beautiful, modern, streamlined designs. Latest engineering improvements. Write now for dealer catalog.

TYLER FIXTURE CORPORATION, Dept. E, Niles, Mich.  
New York Office: 601 W. 26th St. Chicago Office: 1663 W. Ogden Ave.

**SIZES AND TYPES TO TAKE CARE OF EVERY PROSPECT**



**AMERICA'S BELT BIBLE**

**FREE** 1938 Gilmer Belt Catalog

Most complete f. h. p. belt catalog ever issued. 144 Pages. Belts for 4450 models, 135 makes of electric refrigerators listed by lengths, cross-sections, manufacturers' part numbers. Your copy FREE

Send your Name and Address to  
**L. H. GILMER COMPANY, Tacony, Philadelphia**

A tight system calls for  
**FITTINGS THAT WILL STAY TIGHT**

**IMPERIAL S. A. E. flared fittings** have been setting a mighty fast pace in the air conditioning and refrigeration field... and their rapid acceptance by installation and service men is based on results. Imperial fittings are tight when the job is finished and they stay tight.

Write for catalog covering complete listing of sizes and prices.

**IMPERIAL BRASS MFG. CO., 365 S. Racine Ave., Chicago**

**IMPERIAL Fittings** ORDER FROM YOUR JOBBER

VALVES • TOOLS • CHARGING LINES • FLOATS • DEHYDRATORS • STRAINERS

**MILLS**

**COMPRESSORS**

*for Commercial Use*

Mills Novelty Company • 4100 Fullerton Avenue • Chicago, Illinois



**NO KIDDING—**

● A serviceman recently removed a gauge from service and found that the pointer refused to return to zero. He removed the pointer; re-set it to zero and said, "Well now we can **PLAY** like it's right."

If that had been a Marsh "Recalibrator" Gauge he wouldn't have had to "kid" himself that it was accurate throughout the scale simply because he had made it accurate at zero. The Recalibrator corrects the SOURCE of inaccuracy—the distortion of the bourdon tube. It corrects, not merely for one point, but for ALL points.

This patented Marsh feature is typical of the long list of betterments found in Marsh Gauges, Thermometers, Recorders and other refrigeration instruments. You pay little if any more for these Marsh betterments.

**JAS. P. MARSH CORPORATION**  
2067 Southport Avenue Chicago, Ill.

**MARSH** Refrigeration Instruments  
GAUGES—THERMOMETERS—RECORDERS—MERCURY SWITCHES

## Air Cooled 'Phone Booth At New York Fair May Lead To Wholesale Demand For Them

NEW YORK CITY—Better than a postcard saying "Wish you were here!" will be the souvenirs available to lucky visitors to the exhibit building of American Telephone & Telegraph Co. at the coming New York World's Fair of 1939. Individuals chosen by lot will be allowed to place a long distance call to friends or relatives anywhere in the United States—and they won't be billed for it on the first of the month, either.

As a final touch of luxury for lucky winners, their end of the conversation will originate in a completely air-conditioned 'phone booth.

Because many of AT&T's demonstrations at the fair will call for participation by individuals in the audience from booths, every effort to provide personal comfort through air conditioning of these areas is being made, announces John Mills of Bell Telephone Laboratories, who is in charge of exhibit design.

### COOLS MANY BOOTHS

Air-conditioning equipment will be supplied by General Electric Co. In addition to the long-distance demonstration, there will be more than 100 booths in a sound-proof section of the building in which fair visitors will be invited to test whether or not their hearing is normal.

The many booths, and a considerably larger area, will be served by a single air conditioner equipped with a variable-speed fan driven by a wound-rotor induction motor. A smaller air conditioner, with similar

fan equipment, will serve offices, reception room, and first-aid room.

The two conditioners will be connected to a 40-hp. G-E condensing unit equipped with cylinder cut-off control, so that the compressor can operate at 25, 50, 75, or 100% of full load capacity, as circumstances demand. Condenser will operate on city water. Compressor will be started through a two-step resistance-type reduced-voltage starter.

In addition to this central system, a 3-hp. G-E space cooler will serve an area on the building's second floor. Entire system will be of the direct-expansion type, providing cooling only.

### 'EAVESDROPPING' OKAY

A huge map of the U. S. will be displayed in one wing of the building. At each end of the map, booths with glass panels will be located, and a cable with telephone headsets will connect them. When a person selected by lot enters a booth to make his long-distance call, a ribbon of electric lights will mark the path of his call from New York City to the chosen spot.

The crowd will be allowed to eavesdrop on the conversation, through headsets.

Building was designed by Vorhees, Gmelin, & Walker, architects; Mayer, Strong, & Jones are consulting engineers; and Vermilyea-Brown Co., general contractors. Air-conditioning contractor will be Baker-Smith Co., and equipment will be supplied by Alfred L. Hart, Inc., G-E distributor in Brooklyn and Long Island.

## Big Advertising Campaign Promotes Double-Glass Windows To Public

TOLEDO—"Window Conditioning" in the form of double-glass insulation is slated to be the object of the next big promotional program of Libby-Owens-Ford Glass Co. Advertising for this new campaign to double double-glass sales has been started in the Saturday Evening Post, and will be continued in a long list of other general magazines.

Picturing an idyllic summer scene, the opening advertisement promises the homeowner "eight more months of June with window conditioning." Other advertisements will be of this same general nature, their theme varying with the season.

Each advertisement in the series will stress the following nine advantages of insulating windows by application of double-glazed sash or storm windows:

### WHAT IT DOES

1. Gives you greater comfort—better health.
2. Cuts fuel bills 20 to 30%.
3. Saves you more than any other single form of house insulation.
4. Makes uniform temperatures easier to maintain throughout the house.
5. Lessens drafty danger zones near windows and floors.
6. Makes healthful humidity possible without foggy windows, soiled draperies, and moisture on window sills.
7. Reduces cleaner's bills and doctor's bills.
8. Fuel savings help pay for a modern heating plant.
9. "Window Conditioning" is a sound investment—fuel savings alone can pay for it in less than two winters. Dividends continue year after year. Financed under FHA—no down payments.

### 12 MILLION HOMES

Twelve million American homes, according to Libby-Owens-Ford estimates, operate central heating plants, and this is where the primary market is believed to lie. Of these 12,000,000 homes, the company reports, nearly 1,000,000 are already equipped with winter air conditioning, forming what should be an easy-to-sell section of the total market.

Besides Saturday Evening Post, general magazines to carry the "Window Conditioning" advertisements include American Home, Better Homes & Gardens, Collier's, Good Housekeeping, House and Garden, House Beautiful, and Parents' Magazine.

In addition, a business paper schedule has been drawn up including

American Builder, American Lumberman, Architectural Forum, Architectural Record, Building Supply News, National Real Estate Journal, and Pencil Points.

This advertising drive will be backed by a welter of promotional and explanatory material which will be sent to dealers and others, telling them how to cash in on the drive by selling "Window Conditioning" now while the predicted building boom is materializing. Then, the company reasons, when the boom actually arrives the campaign will possess so much momentum that lumber dealers and others will find little trouble selling architects and builders on the idea.

## Fretz Sales Drive on Theaters Gets Results

PHILADELPHIA—Several neighborhood theaters here have been air conditioned by S. S. Fretz, Inc., General Electric air-conditioning distributor, in a sales drive launched last spring and still going strong.

The Hamilton theater, having a capacity of 900 persons, is equipped with one 25-hp. and one 30-hp. compressor, with an evaporative condenser.

Two 30-hp. compressors, an evaporative condenser, and a central plant air conditioner were installed in the Crest theater, for which the Fretz Co. also designed and installed the winter heating and ventilation system. While the latter system was being installed, the company sized the ductwork for cooling, and later a contract for the air-conditioning system was signed. The Crest, which has a capacity of 950, was built in the fall of 1937 by Leo Posel.

Mr. Posel also owns the Lyric and Regal theaters, which the Fretz Co. has air conditioned this year. The system in the Lyric includes two 25-hp. compressors, an evaporative condenser, and a central plant air conditioner.

The Regal was equipped with one 25-hp. condensing unit and Freon direct-expansion coils, additional cooling being obtained by using cold water coils with well water.

### For Tourist Cabins

LOS ANGELES—An evaporative-type air cooler designed especially for tourist cabins has been announced by Air Rite, Inc. here. List price of the new unit is \$37.50.

## Columbia Air Control Courses Open In Sept.

NEW YORK CITY—Two evening courses in air conditioning, beginning with the winter session late in September, are being offered by the School of Architecture of Columbia University, in cooperation with the department of mechanical engineering. The courses will be repeated in the spring term.

Air Conditioning I, given by Edwin H. Taze, is described as "a general course outlining the scope of the industry, its field of activity, and its fundamental principles."

Subjects covered include psychrometry, air distribution, heat transmission through building construction, heating and refrigeration methods, and the solution of simple practical problems.

Special consideration will be given physiological reactions to air conditioning and its effect on health in the comfort cooling field.

Mr. Taze is a graduate mechanical engineer (University of Illinois) who has been associated with the American Blower Corp. for nine years, in addition to two years with Airtemp, Inc. Recently he has been specializing in the design and sale of steam-jet refrigeration systems.

Air Conditioning II is a technical course intended for advanced students in mechanical engineering, and for those who have had sufficient technical experience in the laboratory, field, or office.

This course gives consideration to the selection of air-conditioning equipment and the solution of problems dealing with quantitative relations in the performance of elements of systems and installation assemblies in buildings.

An analysis is made of zoning methods, the economy of the by-pass control, and various special methods of producing refrigeration and dehumidification.

Instructor in Air Conditioning II is Albert J. Lawless, a partner in the firm of Hubbard, Richard and Blakeley, consulting engineers of New Haven and Boston.

## Carrier Lists Features Of Winter Systems

SYRACUSE, N. Y.—Features of the new direct-fired winter air-conditioning system introduced to dealers and distributors by Carrier Corp. at its recent summer meeting held here include a "tear-drop" heat-interchanger unit, one-piece air-cooled casing, non-rusting humidifier, cushioned fan, and a matched cooling unit which is supplied as optional equipment.

Engineers for the company state that the unit is shipped almost completely assembled, and may be installed in two hours. Available in either oil or gas-fired, the oil units are equipped with a rotary type oil burner.

Distribution of conditioned air from the Carrier furnace is by means of a centrifugal fan, which is completely isolated from the rest of the system. The fan wheel, scroll fan motor, and belt-drive, are all mounted on an angle-iron frame which is independent of the unit. Bearings are mounted on rubber cushions, to reduce vibration.

Laboratory tested, non-rusting alloy steel is used in the humidifier, which is located at the top of the heating unit and is easily accessible. Over-size dust-proof filters, located above the fan assembly, clean the air thoroughly before it passes to the fan. Filters may be replaced by removing an inconspicuous door panel.

Control of the system is regulated by a room-thermostat, and a control panel, fitted with a master dial, is supplied with all units. The control panel requires only seasonal adjustment, it is said.

As a companion to the direct-fired oil and gas furnaces, Carrier has introduced a "split" system for use in larger homes. A boiler supplies steam for direct radiation in bathrooms, kitchens, sun-parlors, servants' quarters, and other remote parts of the building. The boiler also provides steam for coils located in the unit, which supplies warm air for winter conditioning work.

The "split" system may be used as a straight winter air-conditioning unit, or installed with radiation. Summer air conditioning also is available with the use of a matched cooling system.



## CLASSIFIED ADVERTISING

RATES: Fifty words or less in 6-point light-face type only, one insertion, \$2.00, additional words four cents each. Three consecutive insertions \$5.00, additional words two cents each.

PAYMENT in advance is required for advertising in this column.

REPLIES to advertisements with Box No. should be addressed to Air Conditioning & Refrigeration News, 5229 Cass Ave., Detroit, Mich.

### POSITIONS WANTED

AVAILABLE: Refrigeration and air conditioning engineer with five years' experience in laboratories of large manufacturers, two years' service managerial experience, four years of sales experience and ten years' production work. Member of ASRE and ASME. Box 1072, Air Conditioning & Refrigeration News.

### FRANCHISE AVAILABLE

OLD FURNACE Soot . . . Dirt . . . Gaseous odors . . . etc., disappear when you "Double Seal" furnaces, ducts, conductor pipes, etc., with Sauereisen Insulating Paint No. 19. Not an oil paint, but a fire-proof Ceramic Paste. Used by leading manufacturers for fireproofing, sealing, etc. Order a trial gallon at \$3.00. Salesmen and distributors wanted. SAUERISEN CEMENTS CO., Pittsburgh, (1514) Penna.

### EQUIPMENT FOR SALE

WE OFFER for immediate delivery below distributors cost—one each of following G.E. condensing units: Water Cooled SO<sub>2</sub>: CM-4W-1/2 Hp., CM-5W-1 Hp., CM-6W-1 1/2 Hp., CM-6W-2 Hp., CM-8W-2 Hp. Water Cooled F-12: CM-F-5W-1 Hp., CM-F-8W-3 Hp. One only CM-F-4D-3/4 Hp. Air Cooled F-12. One only CM-F-6A-2 Hp. Air Cooled SO<sub>2</sub>. F.O.B. Louisville, Ky. F. C. JOHNSON, Box 1620, Louisville, Ky.

### REPAIR SERVICE

CONTROL REPAIR service. Your controls repaired by expert mechanics, with special precision equipment. Supervised by graduate engineers. We stress perfection and dependability before price. One year guarantee on domestic controls. Any bellows operated device repaired. HALECTRIC LABORATORY, 1793 Lakeview Road, Cleveland, Ohio.

DOMESTIC CONTROLS repaired: Ranco pencil \$1.75, Ranco box \$2.00, General Electric \$2.00, Tag \$2.00, Cutler-Hammer \$2.00, Penn \$2.00, Bishop Babcock \$2.50, Majestic \$2.50, Penn magnetic \$2.50, G. E. Frigidaire \$2.50. In business over 20 years. Our name is our guarantee. UNITED SPEEDOMETER REPAIR CO., INC., 436 West 57th Street, New York City.

WORLD'S LARGEST Rebuilders of hermetic units. Specializing in Majestic, G. E., Westinghouse and Grunow. Dealers exchange price \$30.00 with 18 months' written guarantee. Parts for Grunows and Majestic all models. G. E. units wanted for cash. Send for catalogs. G & G GENUINE MAJESTIC REFRIGERATOR AND RADIO PARTS SERVICE, 5801 Dickens, Chicago.

GENERAL ELECTRIC and Westinghouse hermetic units rebuilt. Guaranteed unconditionally for one year and returned to you refinished like new. Units are entirely disassembled in our large modern shop, tested through every step of production during rebuilding with the most complete test equipment for accurate work, then subjected to exhaustive running tests under actual operating conditions. Each unit measures to exacting standards after rebuilding. Prices \$30.00 on General Electric DR-1, DR-2, and Westinghouse; \$35.00 on General Electric DR-3. Quotations furnished on other models. Quick service—guaranteed work. REFRIGERATION MAINTENANCE CORP., 365 East Illinois St., Chicago, Ill.

### PATENTS

HAVE YOUR patent work done by a specialist. I have had more than 25 years' experience in refrigeration engineering. Prompt searches and reports. Reasonable fees. H. R. VAN DEVENTER (ASRE), Patent Attorney, 342 Madison Avenue, New York City.

## WEATHERHEAD

Refrigeration Valves and Fittings  
A complete line in  
SAE and Inverted Types  
THE WEATHERHEAD CO., CLEVELAND, OHIO

### FOR SEAL REPLACEMENTS

USE CHICAGO SEALS  
CHICAGO SEAL CO.  
3 S. CLINTON ST. — CHICAGO, ILL.

**SUPERIOR**  
VALVE & FITTINGS CO.  
500-37th ST. PITTSBURGH, PENNA.  
Manufacturing a complete line of DIAPHRAGM PACKLESS VALVES, MANIFOLDS, ACCESSORIES and FITTINGS for the Refrigeration and Air Conditioning Industry.

## Kelvinator To Extend 'Production Line' Plan Of Selling To Heating

DETROIT—The "Production-Line" plan of selling, used with satisfactory results in selling Kelvinator commercial refrigeration equipment this year, has been applied to the company's current campaign on automatic heating, reports H. M. McGaughey, sales manager for the air conditioning and automatic heating department of Nash-Kelvinator Corp.

Because of the close relationship existing between air conditioning and automatic heating, Kelvinator has combined the two departments under one sales head. Mr. McGaughey, formerly sales manager of the commercial air-conditioning department, has been placed in charge of the combined department.

Assisting him are L. G. Estep, formerly of the residential air-conditioning department, and J. Lee, who was previously sales manager for the Interstate Electric Co., Shreveport, La.

Included in the Kelvinator automatic heating line now are pressure-type conversion oil burners, the Kel-O-Flame oil-fired boiler, oil-fired warm air conditioners, gas-fired warm air conditioners, gas-fired boilers, and bituminous coal stokers.

Under the "production-line" plan of selling, provision is made for easy and proper handling of each step in the selling process from the location of the prospect, through a "building and modernization census," in this case, to the closing of the sale with a personalized proposal.

### 'CENSUS' TAKEN FIRST

First step in the "production-line" process is the securing of the "raw material," prospects, by means of a "building and modernization census," conducted by the distributor through architects, builders, and realtors, as well as through prospective homeowners and owners of existing residences.

This part of the plan is designed to qualify prospects for later sales efforts by company salesmen. Information sought includes type of home construction, type of heating plant, insulation, and whether or not the owner plans addition of air-conditioning equipment later.

Worker making the initial contact leaves with the owner a card, entitling him to a copy of the results of the survey, to be compiled later.

### CALL-BACK NO. 2 STEP

Second step in the selling plan, placing the "raw material" into production, is reached by means of a call-back, at which time the salesman uses as a door-opener a booklet on "Modern Housecleaning Management," containing a number of tips on how to keep the house clean and attractive.

After he has presented the homeowner with the booklet, the salesman goes into the third step in the "production-line" plan, the "assembly," or actual sales presentation.

This is done with the aid of the sales presentation album on automatic heating, similar in general outline to that used by the company this year on commercial refrigeration.

If the prospect professes sufficient interest in the album presentation, the salesman next takes the fourth step in "production"—the "finishing operations," in this case the making of a home heating survey.

Returning with this to his office, he turns it over to the engineering department, where a personalized proposal is made. This personalized proposal, with the request for the order, closes the production-line selling method, just as does the final "inspection and approval" on manufactured products.

### RESULTS BY STEPS

Results of the "production-line" plan's use on commercial refrigeration sales, tabulated by the company over a seven-month period since its inauguration Feb. 1, show the following averages:

- 1 sale to very 12.6 "census" contacts.
- 1 sale to very 3.7 demonstrations given.
- 1 sale to every 2.44 proposals presented.
- 1 demonstration to every 3.39 "census" contacts.

## Industry Associations Asked To Participate In January Exposition

(Concluded from Page 1, Column 4) American Society of Refrigerating Engineers to hold its annual Winter Meeting in conjunction with the Exposition and plans are being made to invite a number of other national and local organizations to synchronize their meetings with the Exposition. All plans are in the direction of making Chicago the gathering place for all groups interested in the latest developments in refrigeration and air-conditioning equipment during the week of Jan. 16.

Pictures of some of the manufacturing executives who are actively promoting the Exposition appear on page 1 of this issue.

AIR CONDITIONING & REFRIGERATION NEWS is cooperating with the Association in promoting the Exposition and will dedicate its five hundredth issue, which will appear Oct. 19, 1938, to advance announcements and complete details regarding the program.

## Milwaukee Union Asks Wage For Salesmen; Seeks \$5 Trade-In

(Concluded from Page 1, Column 2) purpose elimination of practices which made it virtually impossible for a dealer to make a reasonable profit.

Among contract additions now sought by the union for employees are:

A provision setting minimum salaries for apprentice salesmen at \$15 weekly, with the scale ranging up to \$40 for experienced salesmen with a high sales record.

A commission in addition to minimum guarantees on sales over established quotas.

Adherence to a plan of rotation among salesmen on floor sales.

### CONTRACT CHANGES

Other contract changes sought are: Inclusion of radios and small plug-in appliances under items covered by unfair trade practice provisions of the agreement.

Substitution of a flat \$5 allowance for ice boxes offered as trade-ins for mechanical refrigerators for the present maximum allowance of 8% of the list price of the new appliance. No trade-in allowances are to be permitted on 1937 models.

The subject of wages is brought up by the union under a clause of the contract, which has been binding between many dealers and employees since March 1 and since signed by most dealers in the Milwaukee area, which provides:

"It is agreed that the parties will later negotiate the question of wages and when they have come to an agreement, same will be appended to this agreement and become a part thereof."

Sales of a minor appliance in conjunction with a refrigerator, electric or gas range, or a laundry appliance at a price far below even its wholesale cost by a few dealers, thereby violating the intent of the union contract without bringing about an actual infraction, has made it advisable to bring small plug-in appliances under the contract, union officials explained.

### CHARGE 'GIFTS'

Scaling down the trade-in allowance for ice boxes is designed to bring about a greater profit to the dealer by eliminating a "gift" to the refrigerator purchaser. One Milwaukee dealer suffered a loss of \$7,000 since January 1 with an 8% trade-in allowance on boxes which were of no value to him.

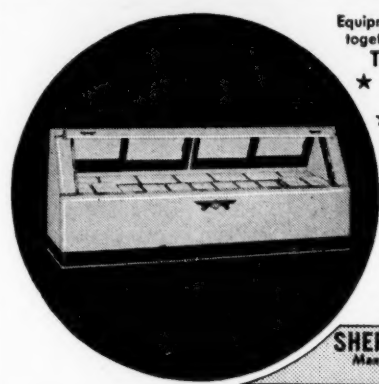
Members of the dealers' negotiating committee are:

Gordon Ische, Ische Brothers Radio Co.; Al A. Haasch, A. Haasch Electrical Co.; Joe Birnbaum, Birnbaum's Radio Stores; George Manchot, Real Radio Service, Inc.; A. D'Amico, Modern Radio Sales, Inc.; Ernest Schefft, Schefft's, Inc., and George Inghram, Droegkamp-Inghram Co.

Members of the union's negotiating committee are:

Herman Burbach, business agent for the union; C. Moorman, L. Duckler, and G. Bartosch.

## THE BUYER'S GUIDE



Equipment and Compressor sales go together. Sell both on one contract.

The Sherer Franchise Offers:

★ COMPLETE LINE OF CASES, COOLERS AND BOXES.

★ NEW EQUIPMENT constantly under development, opening new fields for compressor sales.

★ LAYOUT DEPARTMENT—layouts for store modernization programs without obligation.

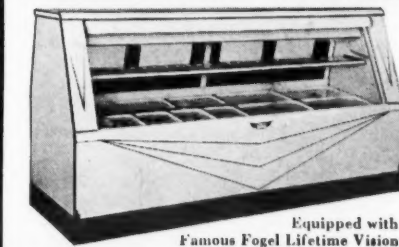
★ ADVERTISING—Sherer Equipment advertised by mail and in leading trade publications.

SHERER-GILLET CO., MARSHALL, MINN. Manufacturers of Refrigerated Display and Storage Equipment

PROFIT WITH  
**Sherer**  
CASE and  
COOLER  
FRANCHISE

Write for catalog and franchise details, mentioning territory desired

## "NOTHING MORE TO BE DESIRED"



Equipped with Famous Fogel Lifetime Vision

That is what a new dealer said after inspecting Fogel equipment. And his volume, good will, and profits have borne out that statement in a short time.

Many hundreds of dealers are successfully selling Fogel Refrigerated Food Storage and Display Equipment.

INQUIRE TODAY about our interesting distributor proposition for qualified firms.

**FOGEL REFRIGERATOR COMPANY** Since 1899  
16th & Vine Sts., Phila., Pa.



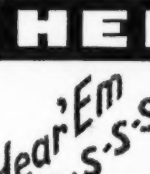
# Chief

Message No. 1

**WE PRODUCED:**

1933—10,000 Compressors	1936—100,000 Compressors
1934—20,000 Compressors	1937—140,000 Compressors
1935—40,000 Compressors	1938—170,000 Compressors

**TECUMSEH PRODUCTS CO., TECUMSEH, MICH.**



# HENRY

Hear 'Em Hiss-S-S-S!

**ABSO-DRY**

**Pressure Sealed DEHYDRA-TECTOR**

A combination dryer with liquid indicator. Gas bubbles passing under sight port glass indicate refrigerant shortage. Vacuum dried and pressure sealed. Choice of 5 dehydrants.

TYPE 721

WRITE FOR CATALOG

**HENRY VALVE CO.** 1001-19 N. SPAULDING AVE. CHICAGO, ILLINOIS  
STOCKED BY LEADING JOBBERS

**MELCHIOR, ARMSTRONG, DESSAU CO.**  
300 FOURTH AVENUE NEW YORK, N. Y.

**Refrigeration • Heating  
Air Conditioning**

PROMPT SHIPMENT FROM LARGE STOCKS FOR THE RUSH SEASON

BROOKLYN NEWARK ROCHESTER BUFFALO BOSTON PHILADELPHIA HARRISBURG BALTIMORE WASHINGTON

**7 COMPLETELY STOCKED WAREHOUSES**

**REFRIGERATION AND AIR CONDITIONING**

WRITE FOR OUR CATALOG ON YOUR LETTERHEAD  
BRANCHES: NEW YORK, CLEVELAND ST. LOUIS and 3 CHICAGO BRANCHES

**PARTS.**

THE HARRY ALTER CO., 1728 SO. MICHIGAN AVE., CHICAGO, ILL.

**Modern**

**Refrigeration Shafts**

For reliable, accurate, time-tested service, Shafts by "MODERN" are regarded as leaders in the refrigeration and air conditioning industry. Send us your blueprints and specifications for estimates on your Shaft requirements.

**MODERN MACHINE WORKS, INC.** 5353 S. Kirkwood Ave. Cudahy, Wisconsin